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Railway Age

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This "Midget" No. 10-F Little Giant Air Drill drills and counter-sinks tell-tale holes in one operation.

A truck-mounted Little Giant Wood Boring Machine drilling 2-inch holes in freight car frames.

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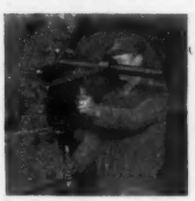

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C-P Service Engineers will gladly link their broad experience with yours, in applying similar tools and methods to your maintenance program.

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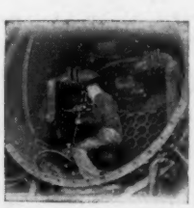

Superheater joints are ground economically with this No. 4 Little Giant.

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Day-in and day-out under normal conditions this No. 1-C Little Giant taps an average of fifty 1-inch staybolt holes per hour.

This No. 12-C Little Giant is reaming 2½-inch holes for washout plugs. A compact, powerful machine for close quarters work.

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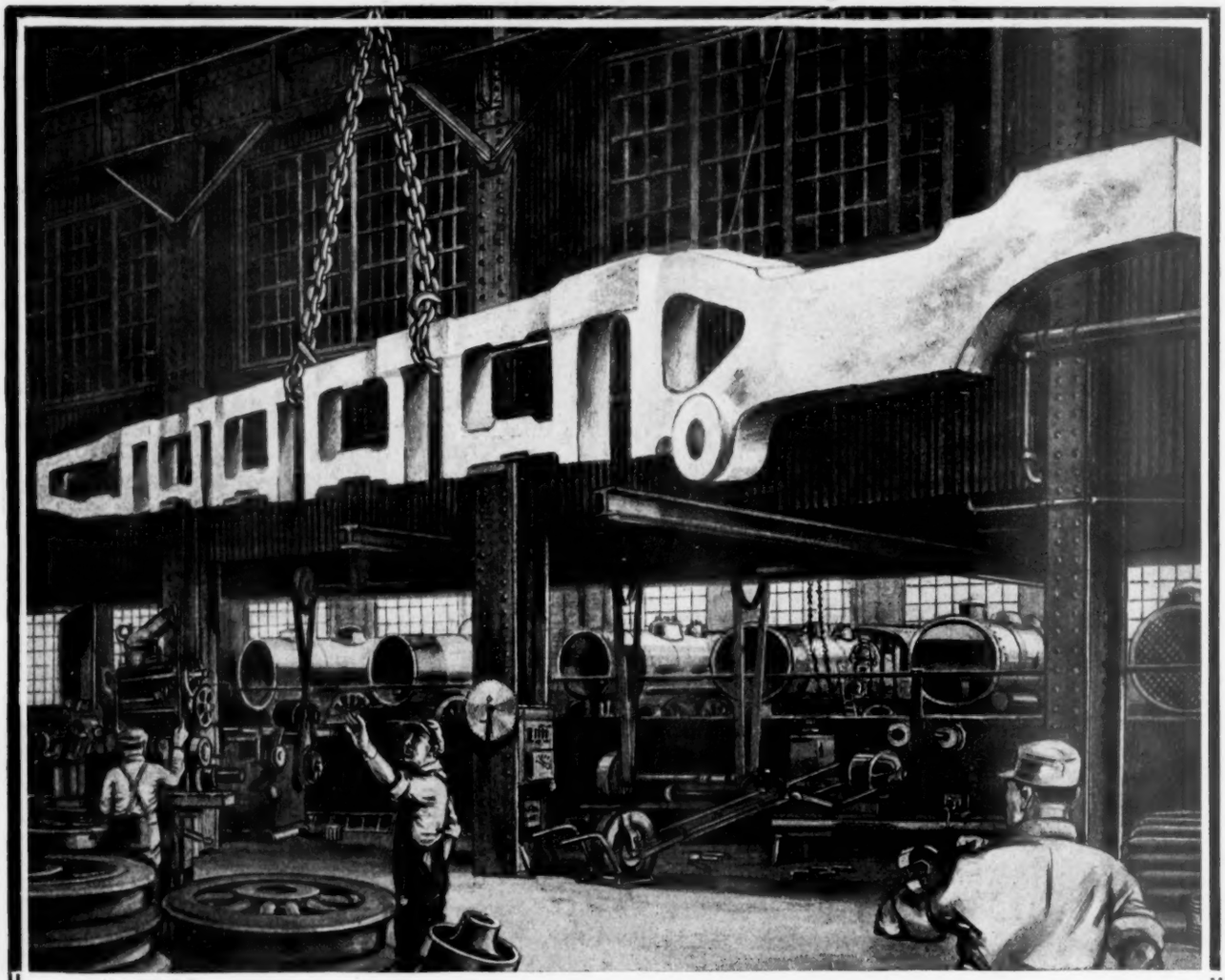

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EDITORIAL

Railway Age

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A Bonus for Quality

Autogenous welders receive five cents an hour above the standard rate paid machinists at the point employed. This is quite fitting and proper as autogenous welding is work that requires special knowledge and special skill. Unfortunately it is a flat wage rate and unfortunately, too, speed in welding is a desirable factor. These two facts are apt to cause trouble, as the quality of the weld is of primary importance. Because of the five cents an hour higher wage and because he has the privilege, a machinist may decide that he wants to do autogenous welding even though he has had no previous experience in this line of work and may not be a man who is capable of becoming a first-class welder. This, of course, means a lot of time spent in training and may mean many bad welds with possibly a failure that will give all autogenous welding a black eye. Speed in welding is, of course, desirable, but it should never be obtained at the sacrifice of quality. Conscientious and skillful work coupled with careful and intelligent supervision provides the only sure road to successful welding. Generally speaking, it is not difficult to tell the difference between a good and a bad weld and payment for welding should be in proportion to the ability of the operator and the quality of the work he turns out. A five cent higher basic rate of pay can not be called a bonus, but if a bonus were given it ought to be on a quality rather than a quantity basis. Companies outside of railroads are considering this form of payment, and in all probability it will eventually find its way into railroad practice.

The Trainmaster's Most Useful Function

The most important work of the trainmaster at the present time (on many roads) is the mastering of trains. Included in his duties, now as at all times, he finds a great variety of functions, and, of course, no useful duty is to be neglected without formulating very convincing reasons for such neglect; but with the shadow of a lay-off, because of lack of work, which now hovers over many brakemen (and over conductors and other trainmen as well), the propensity to waste time at the company's expense is observable with increasing frequency. Unless your freight train crews are actuated *and known to be actuated* by the highest sense of honor, you may expect them to prolong in any and every possible way the hours for which they will receive wages. Pay-and-one-half for overtime is a plum that does not grow on every bush, and the plums must be harvested while they are within reach. On one division of a prominent road, last month, a new (and temporary) trainmaster reduced train operating expenses for a month at the rate of about fifty dollars a day, simply by seeing that a lot of average trainmen stepped out of the "average" class and did as well as they knew how. The words which we have italicized are intended as a suggestion to the preoccupied superintendent who, in connection with trainmen's ambition to do good work, takes too much for granted. Those words cannot safely be predicated of the average trainman. The idea of a temporary trainmaster is also a good suggestion. You need one or more additional regular trainmasters, without doubt. There are not many divisions where this is not true. But, feeling doubtful about your ability to show in definite figures the profitableness of another man every month in the year, you hesitate to ask for an appropriation. Why not pick out a good man to do some of this work, just for one or two months?

Railway Supply Exports

David Van Alstyne, who recently returned from a 17 months' trip around the world in which he gave special attention to railway and railway supply conditions, briefly summed up his impressions as to the possibilities of the sale of American railway supplies abroad in an address before the executive committee of the Railway Business Association. This we are printing elsewhere in this issue. Mr. Van Alstyne has the faculty of "getting to the bottom of things" and of subjecting problems which he tackles to a most thorough and exhaustive analysis. He is not likely to be carried away by fads and fancies. The suggestions which he makes as to how American railway supply manufacturers can increase their sales and prestige abroad are therefore worthy of the most careful consideration. American railway supply manufacturers generally have not specialized upon selling their wares abroad and do not recognize the amount of painstaking work which must be done to break down prejudices and to get the foreigner fully to appreciate the necessity of using the latest and best appliances and equipment. To do this properly will require a highly specialized organization such as comparatively few, if any, manufacturers can afford to maintain. Obviously, therefore, it will be advisable for the manufacturers as a group to pool their interests in creating a market for American railway supplies and in seeing that the equipment when furnished is rightly used.

The Morale of Shop Forces

Men employed in railroad repair shops are a factor, and probably the most important factor, in shop production. It is true that without adequate machinery and proper routing methods shop output is greatly limited, but without men proud of their work and earnestly striving for results, the possibilities of economy in shop operation *will never be realized.* Present shop efficiency on a man-hour basis is too low and recent reductions in shop forces make it doubly important to increase by every possible means the morale of men now employed. Careful consideration of local grievances, fancied or real, at each shop and the prompt removal of just cause for complaint will do much to inspire confidence in the fairness of the managements. In fact, any mutual exchange of viewpoints between managements and men, followed by the fair settlement of a disputed question, is bound to have beneficial effects. In a larger way, however, the morale of shop forces can never be increased satisfactorily under present conditions and as long as the national agreements are in effect. These agreements, by maintaining seniority rights and a standard guaranteed daily wage irrespective of output, offer impassable obstacles to increasing the morale of shop

forces. Seniority rights prevent a foreman from showing partiality in advancing men under his supervision, but in practice few foremen need such a check on their authority. In any case, seniority rules have a most deadening effect on the efficiency of workmen. How can a man be proud of his work or take unusual interest in it when that interest fails to secure his advancement over a "don't care" neighbor with a few months' longer service? It is absolutely essential that the proper incentive be provided to secure even an average shop output. A man cannot be expected to work earnestly and enthusiastically with an eye always open to short cuts and easier ways of accomplishing results when his extra effort brings no greater financial reward than does the indifferent, careless attitude of a fellow workman. An important step toward increasing the morale of railroad shop forces will be taken at Chicago when the Railroad Labor Board declares the national agreements void.

Good News from Mexico

Reports from Mexico are increasingly encouraging. By the payment of claims for American cars lost during the years of revolution, the National Railways of Mexico had restored to them on January 1—after a period of two years of suspension—the interchange privileges of the American Railway Association under the per diem rules. Last week news came of the completion of negotiations by the Mexican government and American bankers for a loan of $5,000,000 to be used for the purchase of supplies and equipment, especially locomotives, to rehabilitate the National Railways. The announcement is now made that Francisco Perez, the director general of the National Railways, who for the past few weeks has been visiting the executive offices of some of our southwestern roads, has made arrangements for the leasing of 10 locomotives from the St. Louis-Southwestern, 9 from the Illinois Central, 8 from the Missouri, Kansas & Texas and 3 from the Gulf Coast Lines. In addition various companies have leased to the National Railways 200 tank cars of 10,000 gal. capacity. This borrowed equipment, it is understood, will be used principally in the northern part of the country to relieve the widespread congestion of traffic in that section. The borrowing of this equipment by the National Railways is encouraging, because, with the other forward steps taken by the administration, it gives promise of an early return of normal transportation conditions in Mexico, and is also indicative of the renewed co-operation of the Mexican lines with the carriers on this side of the border—a mutual agreement which will without doubt benefit all parties concerned.

What Engines Should Be Stored

Under present conditions, when serviceable engines are being stored on nearly all roads, the operating department is afforded the opportunity for exercising some discrimination in the selection of power. When every engine is needed for service, it is sometimes impossible to apply the principles of efficient operation in assigning locomotives but this is one handicap that does not exist now. Nevertheless, there are numerous cases where the power that would do the work most economically is not used and often it seems that the selection of engines to be put in white lead is based on considerations of convenience rather than economy. Perhaps some of the mistakes are due to a misconception regarding the efficient range of operation of the same locomotive. The opinion seems to be quite generally held that locomotives are most efficient at the maximum rates and the use of heavier engines on trains of less than the full tonnage is wasteful. Working on this theory, large engines are often stored and lighter power kept in service; yet, in most cases, this is not conducive to economy. The most economical rating, considering all items of expense, is in general about 10 or 15 per cent less than the maximum that the engine can haul. As between different types of locomotives, the most powerful will obviously produce the lowest cost of wages per ton-mile if hauling full tonnage. Therefore, so long as the traffic is sufficient to permit of loading the heaviest power to its normal rating, this power should be kept in service. However, in case the full tonnage cannot be maintained, would it be economical to substitute the lighter engine? If the tonnage per train is the same in either case, there would be no difference in the wage cost and the decision would depend on the relative cost of fuel and repairs. With modern locomotives, the fuel consumption on the basis of horsepower is lowest at moderates rates of work. A superheated steam locomotive that consumes about 4 lb. per horsepower hour at maximum power uses only about 2½ lb. when working at half the maximum rate. This saving of 37 per cent would be reduced in actual service by an increase in the proportion of standby losses. But it is evident that the low rates of working result in marked economy in the use of fuel. Repairs also are minimized when the engine is not forced and the expense of upkeep would probably be reduced sufficiently to prevent any increase in the cost per ton-mile. The result would be that the large locomotive hauling less than full load would be more economical than the smaller engine loaded to its full capacity.

Time to Restore the Balance

The need for more shops, better shop tools, more housing capacity and better facilities at engine terminals, as well as greater development of other transportation facilities that affect the amount of service which may be obtained from a locomotive in a given time, in a general way has been recognized by railway officers for some time. This recognition has not, however, taken a sufficiently practical form. Measures for increasing the carrying capacity of the roads have been confined largely to increasing the supply and capacity of rolling equipment. In an article appearing in this issue facts are presented which show a marked and consistent decrease in the number of trains handled per year by the average freight locomotive during the decade just prior to the war. Furthermore, it appears that all the emergency measures taken as a result of the war stress have only been successful in holding the 1913 average during the years of heaviest traffic since that time, and then at the expense of a considerable accumulation of deferred maintenance. In considering these facts, it should be clearly understood at the outset that they are in no sense an indictment of the efficiency with which the existing transportation plants have been operated. Indeed, the facts presented show a marked improvement in operating efficiency. Not only have the tons of revenue freight per train increased steadily, but they have increased at a greater rate than the potential hauling capacity of the locomotive unit. What the facts do point to, however, is a material waste of capital as a result of the present unbalanced development of railroad facilities, and they suggest the question, How shall the expenditure of new capital be balanced so that the greatest average return may be obtained from every dollar invested? This is a question which ought to be more carefully considered than it generally has been during the past 20 years. Its more careful consideration undoubtedly would result in greater provision being made for getting the best and greatest possible service for that all-important part of the railway plant, the locomotive.

Obstacles in the Recruiting of Foremen

One of the foremost objections to the National Agreement with the maintenance of way forces lies in the increased difficulty which this agreement imposes on the already difficult problem of supplying enough good track foremen. Of the class of men that has been available for track labor in recent years, there is only a relatively small proportion which offers any promise of qualifying as foremen. Therefore, it is highly desirable that the supervisory forces be afforded every possible facility in the selection of the most likely material. There is a saying among roadmasters that any track man who cannot qualify as an assistant foreman or even foreman after a year's experience as a track laborer need never be considered at any later time. This opinion is borne out by a study of the railway careers of hundreds of track supervisors and roadmasters. While many of them spent 15 to 20 years in the capacity of section and extra gang foremen before they were promoted to the supervisory position, few of them spent very many years as laborers. Recognizing the truth of this and knowing that proper material for foremen is not commonly attracted to the gangs for the mere opportunity to work as laborers, the supervisory officers have not restricted their search for foremen to the labor forces, but have looked for likely material wherever they could find it. Many of them set up what were in effect systems of apprenticeship for foremen by inducing the prospects to enter one of their gangs with a virtual promise of a trial as foreman after a certain period of training. At the last convention of the Roadmasters' Association, one of the committees submitted recommendations for an elaboration of this idea as the most feasible solution of the problem. Under the National Agreement all such plans bear the stamp of irregularity and a rigid enforcement of the provisions of the agreement imposes such restrictions on the supervisor in his endeavor to effect a rapid promotion for the most promising candidate that he is very likely to be quickly discouraged.

The Development of Containers

One of the most interesting recent developments in the handling of freight has been the practical discussion of the large size portable container for use on motor trucks, railway cars or vessels. The development of the container system for handling interchange l. c. l. traffic on motor trucks at Cincinnati, has attracted country-wide attention and much favorable comment. During the war the government tested out on the Warrior river a somewhat more extensive plan in the form of large size containers for carriage on railway flat cars and river boats. In an article in last week's *Railway Age* there was shown the latest development along this line, an express container car now operated in experimental service by the American Railway Express Company over the New York Central between New York and Chicago. The containers used are of steel and have a capacity of three to five tons. Nine containers are loaded on one car and in one of the experimental trips, nine containers were transported from nine big concerns in the one city to a similar number in the other; the containers being carried between the freight station and warehouse on motor trucks. It is to be expected that the use of containers of this general type will eliminate much of the manual labor required to load or unload shipments at freight houses or transfer stations and will reduce to a minimum the clerical work required in billing and checking. One of the most important savings will undoubtedly be in the reduction of losses due to theft and damage. There are, however, many difficulties still to be overcome, particularly as to the handling of the containers at manufacturing plants, freight stations and warehouses. A big box of some three to five tons is not easily moved about without cranes and it does not happen that concerns dealing in such commodities as are most suitable for carriage in these containers have such cranes. The working out of feasible means of moving the containers while they are off the car or motor truck seems therefore to be the next and most important step. Nevertheless, the development of the use of the large container represents real progress and will be watched with great interest by railroad men and shippers.

Consolidation and the New England Roads

In the consideration of the situation of the New England roads now before the Interstate Commerce Commission in connection with the matter of divisions, there must necessarily be in the background, at least, the question of what is to be done with these roads in the matter of consolidation. The commission is now engaged in preparing its report on this important question as provided by the Transportation Act. It has engaged the assistance of Professor William Z. Ripley of Harvard University and it is understood that he has filed his report and opinion. Dame Rumor, who has been exceedingly busy of late in starting gossip on railroad consolidations, has been quoted in the public prints as saying that various ideas have been considered as to the consolidation of the New England roads. One is that an amalgamation may be worked out looking to the establishment of one New England system. Another is that the Pennsylvania may take over the New Haven and that the New York Central may acquire the Boston & Maine or that in general the New England carriers will be absorbed by trunk line carriers west of the Hudson river. Outside of the fact that the entire question is largely in the hands of the Interstate Commerce Commission just at present, another measure of official standing has been given to the discussion by some remarks of Andrew J. Peters, mayor of Boston, in his annual message to the city council of that municipality. "The proposed consolidations of the New England railroads with the Pennsylvania Railroad and the New York Central," says Mayor Peters, "would be a most unfortunate catastrophe for all New England, especially for the people of Boston. . . . . the intimate touch with local conditions so essential in this situation would be entirely lacking." There is much truth in what Mr. Peters says, but it is also evident that if the lines are consolidated into a single system the feature of competitive railway service will be eliminated from the New England industrial centers. In short, it is apparent that the working out of a scheme of consolidating the New England carriers, if such is finally deemed advisable, is far from a simple matter.

An Economic Force Worse Than Wasted

In the discussion of J. C. Fritts' paper before the January meeting of the Western Railway Club, it is worthy of note that officers of the car departments of two railroads advocated fixing the A. R. A. prices for labor and material used in foreign car repairs so high that they would provide a profit on repairs for which bills are rendered. Such a policy is fundamentally sound. There are two forces which affect the maintenance of freight equipment in interchange. One is the common interest of all railroads in having serviceable equipment; the other is the interest of the individual roads in keeping down their own expenses and employing their resources in the most profitable channels. Only in periods of car shortage does the first exert any appreciable influence. The other is always acting and is particularly strong

when the greatest opportunity exists for doing constructive work in car repairs; i. e., during periods when there is a surplus of equipment. Under the existing price policy these two forces tend to oppose each other. With prices for labor and material fixed at a level intended, on the average, to cover the bare cost plus overhead the immediate interests of the individual road are not clearly served by a constructive policy of handling repairs to foreign cars, by which in effect it is donating a service from which other roads reap more immediate benefit than it can itself. If this service is worth rendering at all it is worth paying for. This is a principle which holds in all commercial and industrial transactions and the present condition of freight cars supports the contention that it holds with equal force in transactions between the railroads. Why should it not be accepted in interchange repairs, thus directing both of these two motive forces toward raising the standard of car maintenance, instead of having them oppose and neutralize each other, as they tend to do under the present price policy of the mechanical division of the American Railway Association?

What the Railways Are Trying to Do

WHAT THE RAILWAYS ARE TRYING to do in the hearings before the Railroad Labor Board is to pave the way for the re-establishment of working rules and conditions under which they can get increased efficiency of labor. They have not suggested the reduction of any basic wages except those for unskilled labor.

Increased efficiency of labor would make it possible to handle the same amount of business with fewer men. Therefore, like a reduction of wages, it would cause a reduction of operating expenses. A reduction of expenses, through increased efficiency of labor, would be more beneficial to the railways as well as their employees than a reduction of wages. Maintenance of relatively high wages would make the railroad business a preferred source of employment and enable the railroads to get and keep the best class of men. Apparently the only alternative to an increase in the efficiency of labor is a reduction of basic wages, since the operating expenses must be greatly reduced.

Spokesmen of the railways have presented voluminous evidence to the Railroad Labor Board and the public to show how, and the extent to which, the present working rules and conditions have reduced the efficiency of labor. Spokesmen of the employees have retorted that operating expenses are being inflated by bad management. Whether this charge is true or not, the answers to it are obvious. First, mismanagement in other particulars would not justify the continuance of a policy which resulted in wastes through an excessive payroll. Secondly, the Railroad Labor Board has no jurisdiction over the general management of the railroads, but only over their relations with labor. Therefore, the charges and evidence regarding other forms of mismanagement should be presented, not to the Railroad Labor Board, but to the Interstate Commerce Commission, which is the body that has supervision over the general management. The labor leaders are merely trying to evade the question before the Railroad Labor Board when they drag before it matters over which it has no jurisdiction.

The attempts some of the labor leaders have made to divert attention from the questions actually before the Labor Board have been palpable, and in some cases ludicrous. They opened the hearings on national agreements by charging the railway companies with wasting many millions of dollars by giving repair work on locomotives and cars to outside equipment companies. They got some newspapers to publish a yarn to the effect that the railways had raised a fund of approximately $30,000,000 for propaganda to break down the labor unions. The climax was capped when one of the labor leaders solemnly informed press and public that under government control railway officers had taken out and buried large quantities of materials and supplies to inflate operating expenses and discredit government operation. Even the most gullible must find it difficult to imagine federal managers, general managers and other high railway officers purloining large amounts of such weighty articles as steel rails, ties, brake beams, and even perhaps cars and locomotives, carrying them out in the dark watches of the night and entombing them in ditches along the right of way! Charges such as this are enough to bring ridicule upon all the allegations made by the labor leaders against the railway managers.

It has been charged by some labor leaders that a very large part of the increase in the payrolls and in the number of employees, under government control, was made by the railway managers to discredit government operation. The facts regarding the increases in the number of just two classes of employees are sufficient to show how little basis there is for this charge. The number of employees belonging to the nine principal shop crafts increased from 302,828 to 443,774, or 47 per cent. Their annual payroll increased from $318,000,000 in 1917 to $890,000,000 in 1920, after the Railroad Labor Board's award, or 180 per cent. The number of road train employees in 1917 was 226,936, while when the railways were returned to private operation their number was only 225,415, an actual reduction of 1,521. Their total compensation in 1917 was $344,865,593, while after the wage award last July it was running at the rate of about $658,000,000, or an increase of 90 per cent.

These two general classes of employees worked under the supervision of exactly the same federal managers, general managers and other general officers. There was, however, an enormous increase in the number of shop employees, while there was no increase in the number of road train employees. If railway officers had desired to pad expenses, they would hardly have deliberately increased greatly the number of shop employees and actually reduced the number of road employees. The vast increase in the number of employees in the shops took place because the Railroad Administration, over the opposition of experienced railway officers, made changes in the working rules and conditions in the shops which these experienced officers predicted would be productive of inefficiency.

The working rules and conditions which have produced inefficiency, and the consequent great increase in the number of employees, are the very working rules and conditions which the railway managers are now trying to get rid of. Undoubtedly other and great increases in efficiency and economy must be obtained. The cost of fuel has increased from about $400,000,000 in 1917 to about $700,000,000 in 1920. It must be reduced. The cost of materials and supplies has increased from about $700,000,000 in 1917 to about $1,600,000,000 at the present time. It must be reduced. The railroad payroll is the largest item of all. In 1917 it was about $1,704,000,000. It has increased until, according to the latest estimates, it was running before the recent large reductions of forces were made at the rate of more than $3,700,000,000 a year. It also must be reduced.

All these items of expense must be reduced, first, to enable the railways to earn the net return they are entitled to, and which they must earn to furnish the public good and adequate service, and, secondly, to enable them in due course to make reductions in freight and passenger rates. Evidence has accumulated that many of the present freight and passenger rates are too high, and actually are destroying business. Railroad employees cannot afford to have expenses and rates kept so high that they destroy business, because reductions of railroad business destroy the source of their

employment. The interest of railroad employees is to have the railroads handle a maximum business, to employ as many men as are reasonably needed to handle this business, and to pay them the highest wages consistent with the hazards of the employment, the wages paid in other industries and the cost of living. In the long run working rules and conditions which force the railways to employ an excessive number of men will reduce railway traffic, prevent the railways from prospering and being adequately developed, and, in consequence, injure railway employees as well as the railway companies and the public.

Freight Moving Less Than During Switchmen's Strike

THE DECLINE in the freight traffic of the railways has continued until the volume of business being handled has almost set a new low record for recent years. The total number of cars of freight loaded in the four weeks ending January 29 was 2,819,352. This was 460,043, or 14 per cent less cars than were loaded in the same weeks of 1920. It was 116,000 less cars than were loaded in the same weeks of 1919, although at that time the traffic was undergoing the heavy slump which followed the signing of the Armistice. Last April, when the switchmen's strike seriously interfered with transportation, the amount of freight moved declined to a point which it was said at the time threatened the industrial and financial welfare of the country. But even last April, when the effects of the strike were most felt, the railways moved slightly more freight than they did in January, 1921.

The complete statistics of earnings and expenses in January are not yet available but enough is known about them already to make certain that they will make a very bad showing. This bad showing will be due, first, to the tremendous and almost unprecedented decline of traffic and earnings, and, secondly, to the inability of the railways, with present costs of materials, fuel and labor, to effect the drastic economies needed. Probably the railways as a whole have laid off at least 300,000 men since September 1, but the present rules, working conditions and wages, especially those of unskilled labor, are making it necessary to pay so much to those who are kept on the payrolls as to make the labor cost excessive in proportion to the earnings. The present situation is a striking illustration of the fact that the railways are subject to the same wide fluctuations in business, and in both gross and net earnings, as other business concerns, and that therefore if they are to be enabled to earn an annual average year by year of 6 per cent their earnings and expenses must be put on a basis where they will earn at the rate of much more than 6 per cent in periods of good business to provide against the days of bad business.

The Highway Engineers Can Help

WHATEVER THE UNCERTAINTIES of the future that may jeopardize the success of private undertakings at the present time, they can have but little influence on public projects such as highway construction in the various states. Thus, while uncertainties as to the future may constitute legitimate reasons for deferring shipments in certain commercial lines, there can be no like justification for delaying the transportation of materials used in highway construction and few realize what an immense tonnage could be given to the railroads if this work were undertaken at once in a volume commensurate with the plans outlined for the coming season.

Thus, Illinois has projects for 600 miles of new and hold-over construction, while Pennsylvania proposes to build 700 miles. At the rate of 100 carloads of material per mile of road, the work in prospect in these two states alone represents 130,000 carloads to be handled by the railroads some time during the coming season. The plans for all this work may not all be completed, but it is true beyond any question that a very large part of it will be carried out. Therefore, the highway construction programs impose on the railroads a very definite freight business that must and will be handled some time during the present year.

Just when this business will be offered to the railroads depends on the decision of the states' highway executives. The hauling can be delayed until the summer months, when the railroads may be again pressed to the limit of their capacities, or it may be done during the present period of surplus transportation with many thousands of cars available for immediate use. This prompts the suggestion that railway officers appeal consistently to highway engineers to exercise their influence for the early letting of contracts and the movement of materials. In no field is the opportunity for prompt action more favorable. Most states now permit the payment for materials when delivered, the great bulk of paving materials are not injured in any way by storage and advanced delivery does not entail any rehandling not otherwise required. On the other hand no commodity suffers more than road material in the competition for equipment used in hauling coal.

Last year one of the great obstacles that defeated programs for highway construction was the failure of material deliveries. The one way to avoid a repetition of this is to start these deliveries now.

New Books

Railway Surveying and Permanent Way Work. By S. W. Perrott and F. E. G. Badger. 303 pages, illustrated, 6 in. by 9 in. Bound in cloth. Published by Edward Arnold, London, Eng., and distributed by Longmans, Green & Co., New York.

As its title suggests, this book is in reality divided into the two main subjects of railway surveying and of maintenance of way practice, or, stated according to English phraseology, of permanent way work. The book has a joint authorship, being the product of two English engineers, S. W. Perrott and F. E. G. Badger, both with experience not only on leading English roads but in other countries as well. From their experience they have included in a part of the text a discussion of the detailed work in surveying, planning and constructing an economic railway in more or less undeveloped and tropical countries. In this section, as well as in the parts devoted to railway surveying, the subjects in question such as reconnaissance, preliminary location, location, curves and construction, etc., are handled in a fairly detailed and fundamental manner, though throughout there is assumed that the reader has an understanding of surveying to some degree or other.

With a few exceptions the discussion of the problems mentioned conforms to American terminology and practices. The permanent way or maintenance of way section, however, is more of a treatise of English methods of track preparation, construction and maintenance. While dealing in a fairly broad way with such general subjects as ties, ballast, rail and drainage, etc., the major portion covers the practical installation problems of sidings, switches, turnouts and cross-overs, etc. The book, throughout, is well illustrated with reproductions of actual field and office notes, sketches and maps for the first part as well as numerous other plans and drawings more directly concerned with the second part or permanent way section.

Letters to the Editor

A Safety-First Catechism

St. Louis, Mo.

To the Editor:

The instructions which a railroad superintendent gives to his subordinates will be found usually to follow a certain uniform course, from the fountain head to the point where the information is needed, or is effective. First, a rule is formulated—perhaps it was formulated forty years ago. Next, it is put into a rule book and employees are told to familiarize themselves with the contents of the book. Thirdly, there is an oral examination on the rules, and the employee commits to memory the one we have in mind, to the extent of being able to answer the question which is put to him concerning it. Fourthly, someone disobeys the rule and a circular is issued to warn employees generally to avoid the suspension or other bit of ill luck which has befallen the person who forgot or ignored the rule. This business of warning employees to take a lesson from others' mistakes is done, in many cases, with very little skill; and so we see, with increasing frequency, a fifth stage—the stage of larger and more skilfully worded circulars. This is the stage of really effective warnings—effective, that is, in as high a degree as it is possible to accomplish with nothing but paper, type, ink and a printing press. This last stage is a great improvement. Effort put forth in putting style into circulars to employees is not wasted. Large type, colored ink, ingenious features of make-up and all other beautifying elements should be employed as freely as practicable.

But I want to propose a sixth stage: get a written answer from the employee. The most impressive type, or coated paper, or illustrative photographs are useless except as they aid in impressing the desired lesson on the employee's mind; and to get information on that point the man must be induced to express his own thoughts. Oral answers are inherently unsatisfactory, 99 times out of 100, because of the lack of mental training on the part of the examinee. Enginemen and conductors are not rhetoricians. Mere memorizing may give false or deceptive evidence of knowledge; and both oral and written answers fall short in a large percentage of cases because nothing is done to induce the examinee to do any original thinking.

I have been led along this line of thought by seeing a safety-first circular issued recently by a prominent western road. So far as concerns the time-honored standard rules, the point that I have made—or am trying to make—may perhaps be looked upon as lacking in novelty; every operating officer has tried, in this field, all the experiments that he can think of, and he does not wish to think of any more. But safety-first is different. In this the problem is not to make the employee know a rule, but rather to make him more thoroughly digest a rule which he knows already.

The circular to which I refer has to do with the case of a brakeman who was riding on the side of a car while pulling out some stock cars from a stock-yard track and was struck and knocked off by the stock-yard gate, which had been left open; and he was injured. The circular was beautifully made up, on fine paper, in large type, readable some distance off. It was illustrated with a picture and it would attract attention on any bulletin board (if not buried or obscured by other papers, or by the slovenly condition of the board—which condition is frequently observable in trainmen's lobbies). It gave the name of the town, the date, and other details and said that a number of other men on that road had been injured, at other stations, from the same cause. Continuing, it says: "These accidents can be avoided by the exercise of a little care on the part of the men who use these stock-yards, by closing and fastening the gates after using.

"Agents, section men and trainmen should see that this is done, and where gates are left open the fact should be reported before and not after someone is hurt.

"Please explain this matter to the stock shippers and secure their co-operation.

"The employee in charge of switch movement or last using the gates at stock-yards must see that they are closed and secured."

Now, that is fine, as far as it goes. But what effect will it have, except on men near the scene of the accident, or who have recently had occasion to know the details of an accident of that class? The poster might perhaps be improved by adding a half dozen other similar cases, with names and dates and a statement of hospital experiences, cost, etc.; but even then it might not be read with care by the right men. I propose a regular questionnaire on stock-yard gates. Possibly I am going too much into details; but let us try it. After long experience with circulars I have come to feel an annoying sense of unsatisfied expectation whenever I see a document like this, in which there is such a wide gulf between the potential value of the teaching set forth (the value to the man who really remembers it) and the complete and unconscious indifference of the man who ought to have heeded the lesson but did not do so and who, in consequence, got hurt. Send the circular (perhaps on a small sheet) to every brakeman; and with it a letter calling for answers to questions like the following:

Did you ever witness an accident of this kind?
Did you ever hear of one?
At what places and how many of them?
How long ago?
Who was at fault?
How many stock yard gates on the division where you run?
Do you know of any yards with gates out of repair?
If the carpenter or the station agent is to blame for an injury to a brakeman, how does that affect the brakeman?
Who should report gates which are out of order?
When?
To whom?
How?
Do you carry in your pocket some sheets of paper suitable for use in making such a report?
What will happen if you report a gate which ought to be reported by the station agent?

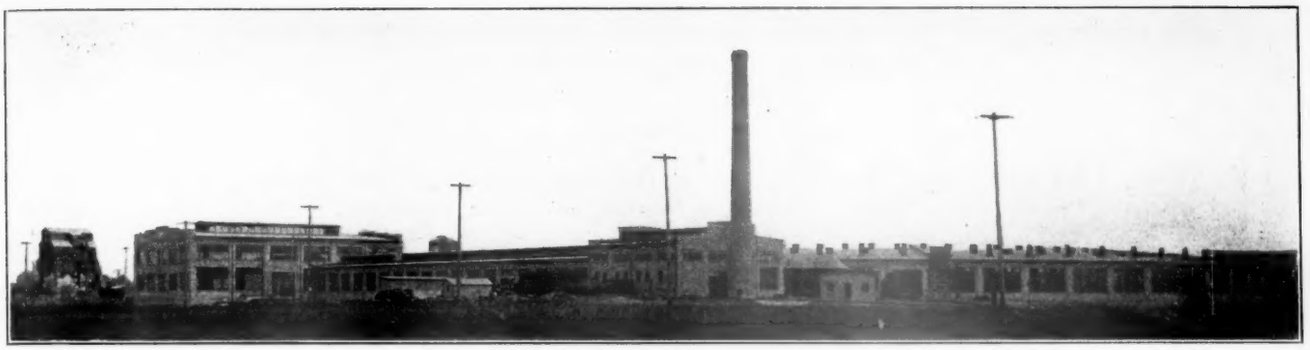
These queries ought to have some visible effect in making a brakeman sit up and take notice. If the author of the circular from which I have quoted will pardon my freedom I will suggest some general questions:

How can the section man decide whether it is he, or the agent, who should report a particular case?
How can a section man know that a gate has been wrongfully left open?
What kind of a speech, and at what length, shall an agent address to a shipper to secure his co-operation?
How should he co-operate?
Who should sign the last paragraph (*italicized*) which I have quoted above?
Does this leave any doubt as to who is responsible for fastening the gate?

Now, I do not pretend to have made a finished questionnaire; I do not warrant this as the best that can be made. Possibly it would be useful for six months but not for twelve. But I do believe that questions of this kind will arouse thought on the part of brakemen or other men who actually read the poster (and the questionnaire); and, surely, that would be a definite accomplishment.

Does someone say that a proceeding of this kind would annoy the men, and that to the extent of doing actual harm? I reply that a good many are annoyed by present safety-first activities. Let us see why this is so. Possibly the introduction of a more serious annoyance might clarify the atmosphere and lead to a general movement to diagnose and cure all annoyances.

May I not ask that you will at least find out what is the state of mind of that portion of your readers who do *not* agree with what I have here proposed? B. T. Horough.



Adequate Shop and Terminal Facilities Permit More Effective Utilization of Motive Power

Are Modern Locomotives Efficiently Used?

Ton-Mile Output Fell Behind, Increasing Tractive Capacity for More Than a Decade Prior to the War

FOR THE PAST 17 years no improvement has been made in the efficiency with which the potential hauling capacity of freight locomotives has been utilized on the railroads of the United States. During this period the average tractive effort of locomotives in freight service has increased about 58 per cent, net tons per train have increased over 100 per cent, but freight train miles per locomotive have shown a decrease of nearly 20 per cent, and apparently only the stress of war conditions has prevented a marked and steady decrease in the net results as measured by the ton miles produced per year by each 1,000 lb. available tractive effort. These statements are based on an analysis of Interstate Commerce Commission statistics from 1902 and 1903, the first years for which the necessary basic data were reported, down to the end of 1919, and are supplemented by estimates for 1920 which are sufficiently accurate to indicate the trend during that year as compared with previous years.

From 1900 to 1914, inclusive, the Interstate Commerce Commission, in its annual report, has classified the number of steam railroad locomotives according to the service to which they were assigned and has included a statement showing the average number of net ton-miles produced annually per locomotive in freight service. Beginning with the annual report for the fiscal year ending June 30, 1902, locomotives have been classified by types in addition to the service classification, the number of locomotives and aggregate tractive efforts being given in each case. By the elimination of the number of locomotives and the aggregate tractive effort for those types which quite generally are not used in freight service, it has been possible to arrive at a fair approximation of the average tractive effort of the freight locomotives in service each year. In each case the number of locomotives so determined has been found to check within a few per cent of the number of locomotives definitely assigned to freight service elsewhere in the reports, which is sufficient indication of a reasonable degree of accuracy in the average tractive effort so determined for the purpose of determining the general trend. Other basic data are freight train miles per year and net ton-miles per train mile, which, in the absence of gross ton-mile statistics, may be used without serious error as the measure of train load. These data are given directly in the commission's reports.

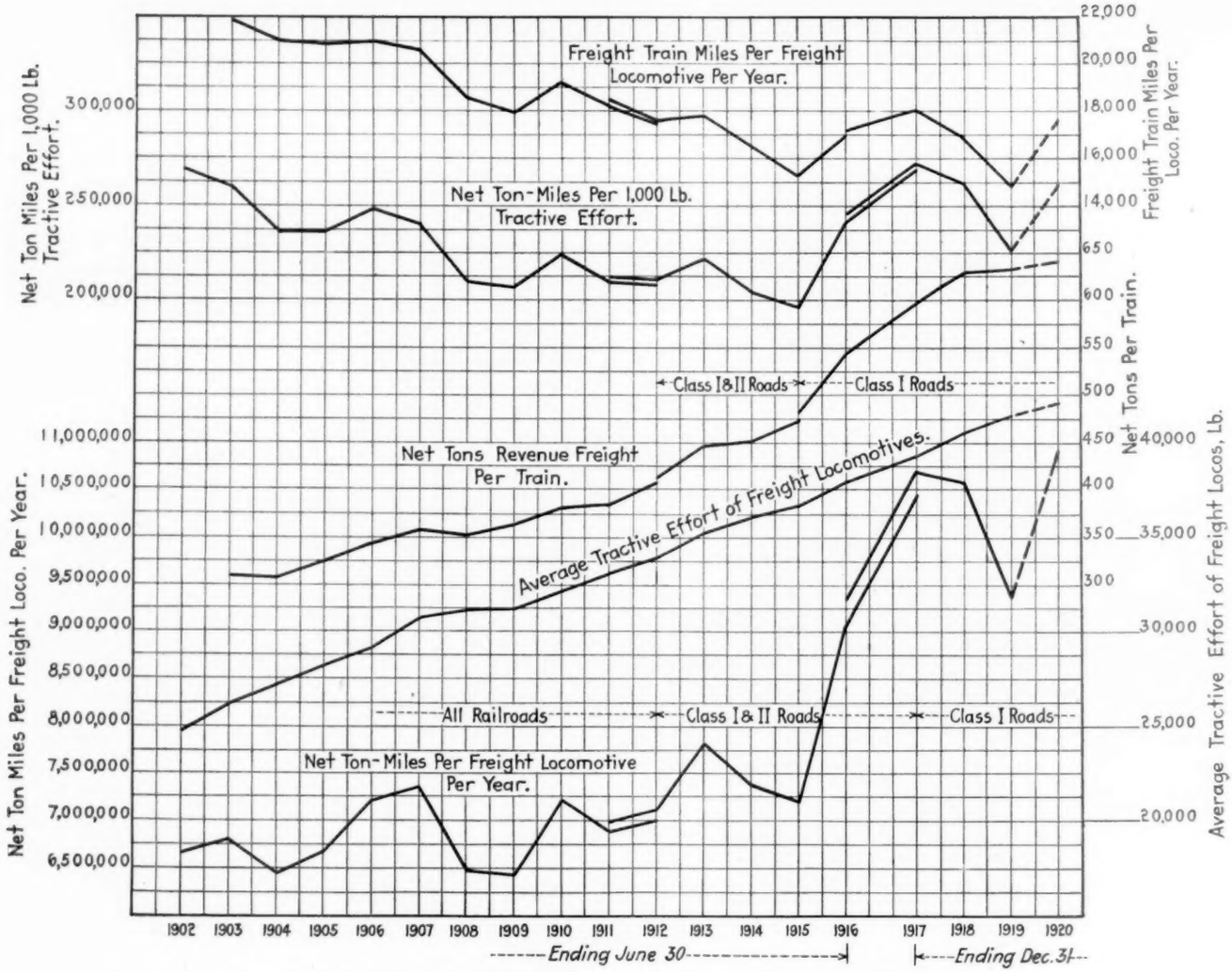
FREIGHT train miles per locomotive have decreased 18 per cent since 1903. Does not this represent a loss of over two months' service a year for each freight locomotive, or an investment in idle locomotives of from $100,000,000 to $200,000,000?

Total locomotive tractive capacity has increased 2½ times since 1903. Could not this investment, if used to help keep shop and terminal facilities abreast of the increasing locomotive capacity, have earned a large return upon itself by reducing maintenance and operating costs?

For the years following the fiscal period ending June 30, 1914, changes in the basis of locomotive classification, and the substitution of the locomotive mile for the locomotive in all ratios involving locomotive performance, have placed some difficulties in the way of a continuance of the comparison. However, the total number of locomotives and the average tractive effort of all locomotives are given, and a study of the relationships existing, respectively, between the total number of locomotives and their average tractive effort on the one hand and the number of locomotives in freight service and their average tractive effort on the other, reveals a high degree of uniformity.

For 14 years freight locomotives, according to the method of compilation employed by the Interstate Commerce Commission, have never been less than 57 per cent and have never reached 60 per cent of the total number of locomotives in service. For the latter half of this period the percentage has never been below 59. Similarly, the average tractive effort of freight locomotives has varied from 15 per cent to 21 per cent above the average tractive effort of all locomotives, and here again the range of variations from year to year have tended to smooth out during the six or seven years immediately preceding the close of the period, when 16 and 17 per cent were the prevailing ratios.

For the purpose of a general survey of the trend of loco-



Trend of Efficiency of Freight Locomotive Utilization, 1903 to 1920

DATA AND RATIOS SHOWING THE EFFICIENCY OF UTILIZATION OF LOCOMOTIVES IN FREIGHT SERVICE—1903 TO 1920

Fiscal year	All locomotives: Number	All locomotives: Ave. tractive effort, lb.	Freight locomotives†† : Number	Freight locomotives†† : Ave. tractive effort, lb.	Ratio ave. T. E. frt. loco. to ave. T. E. all loco.'s	Per cent of all loco.'s in frt. service	Net ton-miles revenue frt. (thousands)	Net ton-miles per frt. loco. per year§	Net ton-miles per 1,000 lb. T. E. per year	Revenue frt. train miles§§ (thousands)	Rev. frt. train miles per loco. per year	Net ton miles per train mile
1902	41,225	20,430	23,594	24,800	1.21	57.3	.....	6,666,499	269,000	.....	.....	.....
1903	43,871	21,780	25,444	26,200	1.20	58.0	173,221,279	6,807,942	260,000	557,804	21,900	310.54
1904	46,743	22,800	27,029	27,200	1.19	57.9	174,522,090	6,456,846	237,000	567,065	21,000	307.76
1905	48,357	23,700	27,869	28,200	1.19	57.7	186,463,110	6,690,760	237,000	578,614	20,900	322.26
1906	51,672	25,200	29,848	29,100	1.15	57.8	215,877,551	7,232,563	248,000	626,840	21,000	344.39
1907	55,388	25,800	32,079	30,700	1.19	58.0	236,601,390	7,375,585	240,000	662,107	20,600	357.35
1908	56,733	26,356	33,655	31,000	1.18	59.4	218,381,555	6,488,829	209,000	622,084	18,500	351.80
1909	57,212	26,634	33,935	31,200	1.17	59.3	218,802,987	6,447,708	207,000	606,092	17,900	362.57
1910	58,947	27,280	34,992	32,200	1.18	59.4	255,016,910	7,237,569	224,000	671,807	19,200	380.38
1911	61,327*	.....	36,405*	.....	....	....	253,783,702*	6,913,259*	209,000*	662,957*	18,200*	.....
	60,271†	28,400	35,792†	33,100	1.17	59.4	253,456,389†	6,998,740†	212,000†	656,314†	18,400†	383.10
1912	62,262*	.....	37,159*	.....	....	....	264,080,746*	7,056,034*	208,000*	649,473*	17,500*	406.76*
	61,276†	29,100	36,615†	33,900	1.16	59.8	263,779,908†	7,134,323†	210,000†	642,739†	17,500†	410.26†
1913	63,378	30,200	37,924	35,300	1.17	59.9	301,398,752	7,843,666	222,000	676,748	17,800	445.43
1914	64,760	31,000	38,752	36,100	1.16	59.8	288,319,890	7,368,713	204,000	638,489	16,500	451.80
1915	64,105	31,600	38,400	36,700	....	....	276,830,308	7,209,122	196,000	584,026	15,200	474.45† / 483.74‡
June 30, 1916	62,988†	.....	37,735†	.....	....	....	343,099,938†	9,092,628†	241,000†	641,813†	17,000†	.....
	61,332‡	32,600	36,400‡	37,900	....	....	339,870,324‡	9,337,097‡	246,000‡	623,504‡	17,100‡	545.10
Dec. 31, 1917	63,687†	.....	38.140†	.....	....	....	397,935,177†	10,443,536†	268,000†	.....	.....	.....
	61,890‡	33,600	36,860‡	39,300	....	....	394,465,400‡	10,701,720‡	272,000‡	660,430‡	17,900‡	597.29
1918	63,889	35,000	38,330	40,600	....	....	405,379,284	10,573,422	262,000	646,007	16,900	628.49
1919	64,868	35,700	38,920	41,400	....	....	364,236,958	9,358,606	226,000	577,117	14,800	631.10
1920**	64,100	36,300	38,460	42,100	....	....	421,000,000	10,960,000	260,000	676,000	17,500	640.00

*These figures and those for the preceding years include Class III railroads. Prior to 1908, returns from switching and terminal companies are also included.

†These figures, and those for 1913, 1914 and 1915 are for Class I and Class II roads.

‡These figures, and those for the years following, are for Class I roads.

**Number of locomotives shown for 1920 are based on A. R. A., Car Service Division, reports. Average tractive effort is estimated on the basis of approximately the same change as in the preceding year. Ton miles and train miles are based on Bureau of Railway Economics reports for nine months, assuming proportionately the same volume of traffic during the last three months as existed in 1919.

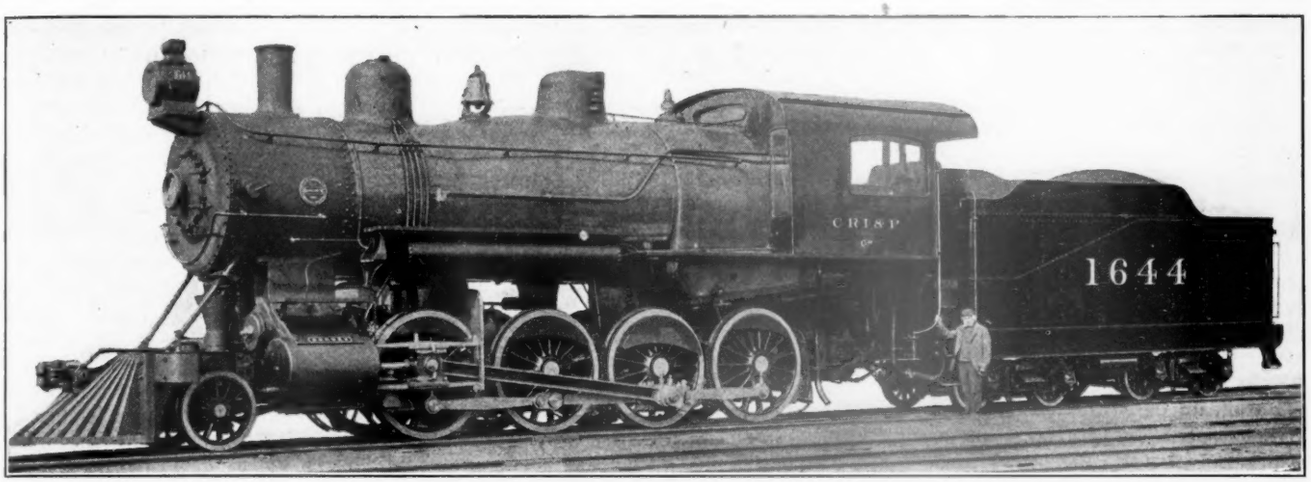
††Number and average tractive effort of freight locomotives for years after 1914 are estimated. The number of freight locomotives is taken as 59.9 per cent of all locomotives; their average tractive effort as 116 per cent of the average for all locomotives.

§Published by the Interstate Commerce Commission up to and including 1914. Calculated for the years since 1914.

§§Includes mixed train mileage.

motive utilization it does not seem unreasonable to assume a fairly close adherence to these relationships during the succeeding years, since there has been no marked change in types of motive power nor has there been any marked change in the distribution of locomotives to the various classes of service. Therefore, for the years following 1914, the number of freight locomotives has been assumed to be 59.9 per cent of the total number of locomotives and their average tractive effort has been assumed to be 16 per cent greater than the average of all locomotives.

Operating statistics published by the United States Rail-



A Typical Freight Locomotive of 1903

road Administration covering the years 1918 and 1919, present a service classification of locomotives which month by month shows no appreciable variation in the percentage of locomotives assigned to the various services. But this is so widely different from the distribution formerly carried by the Interstate Commerce Commission reports that the difference is evidently due to a change in method of classification, rather than in the actual distribution of the power. The classification is not believed to be comparable with that of the commission and the latter has been followed consistently throughout the survey.

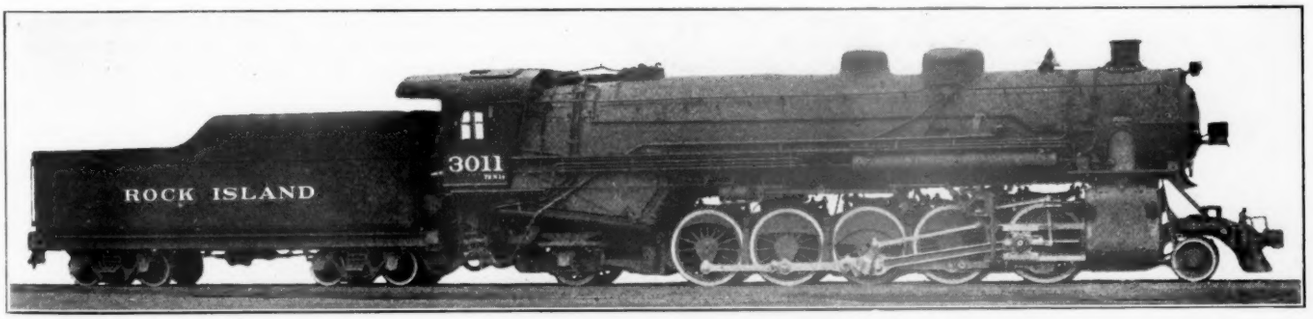
With the number of freight locomotives established, complete data are available for the calculation of the net ton-miles per freight locomotive, which has been thus arrived at for the years since the abandonment of that ratio by the commission.

Attention should be called to the fact that it has been necessary successively to drop from consideration switching and terminal and Class III roads, and finally the Class II roads. These changes in a measure affect the comparability of the data, but the diagrams show how small is the effect in relation to the trend of the curves.

Whatever objections may be raised to the accuracy of the figures given for the last few years, they do not apply to the years prior to the outbreak of the European war and it is the steady downward trend of the efficiency of locomotive utilization during those years which is the most significant fact brought out in the table and diagram.

Referring to the diagram, it will be seen that the average tractive effort of freight locomotives increased with remarkable steadiness throughout the period. Owing to wide fluctuations from year to year in the volume of traffic, as well as in the increase in the number of locomotives in service, the average net ton-miles handled by each freight locomotive showed wide variations, but the net ton-miles per 1,000 lb. tractive effort has consistently declined throughout the entire period.

The curves show a series of cycles of high and low averages and in comparing the net decrease in the efficiency of locomotive utilization over the pre-war period, consistency requires that years occupying approximately like positions in the first and last of these cycles be chosen as the basis of the comparison. Partly for this reason and partly because some of the basic data first became available in that year, 1903 has been chosen for comparison with 1913.



A Typical Freight Locomotive of 1921

During the decade the net ton-miles of traffic increased from 173,221,000,000 to 301,399,000,000, or 74 per cent. The number of locomotives in freight service increased from 25,400 to about 37,900 and the average tractive effort per freight locomotive increased from 26,200 lb. to 35,300 lb., or 35 per cent. This increase in the number and capacity of locomotives made it possible to handle 74 per cent more traffic with an increase of only 21 per cent in the number of freight train miles, from 557,804,000 in 1903 to 676,749,000 in 1913.

During this period much attention was given to tonnage rating and train loading for the purpose of taking the fullest advantage of the operating economies made possible by more powerful locomotives. That much in this direction was accomplished is evident from the fact that the average tons of revenue freight per train increased about 43 per cent, or about 20 per cent more than the potential capacity of the average freight locomotive. In 1903 revenue freight per train averaged 310.5 tons, while in 1913 the average was 445.4 tons.

These comparisons all attest the remarkable increase in the effectiveness of locomotives as operating factors during this decade. But the efficiency with which these locomotives were utilized as producers of ton-miles did not keep pace with the increases in capacity. This is very evident from the fact that the net ton-miles per 1,000 lb. tractive effort decreased from 260,000 in 1903, to 222,000 during the fiscal year 1913, a reduction of about 14.5 per cent. Considering the remarkable increase in the net train loads, it is evident that this loss must be accounted for by the reduction in the freight train mileage obtained from each locomotive. An average of 21,800 freight train miles was obtained from each freight locomotive in service in 1903, while in 1913 the average was only 17,800, a reduction of 18 per cent. On the basis of the results obtained in 1903, this is equivalent to a loss of more than two months' service per year for each freight locomotive in the United States.

Following the reduction in traffic during the business depression of 1914-15, traffic increased rapidly during the next two years, and reached a peak of 394,465,000,000 ton-miles in the calendar year 1917. During this interval there had been an actual decrease in the number of locomotives in service, because of the excess of retirements over locomotive purchases. But the aggregate tractive capacity had actually increased, and the average tractive effort of locomotives in freight service had increased from 36,700 lb. to 39,300 lb. This brought the ton-miles per 1,000 lb. tractive effort up to a point only slightly, if any, above that of 1903 when allowance is made for the fact that the figures for 1903 cover all railroads, including switching and terminal companies, while those represented by the higher curve for 1917 apply only to the Class I roads. This was accomplished by increasing the train loading to 597 net tons, 34 per cent above the loading in 1913. The marked increase in net ton-miles per 1,000 lb. tractive effort was due entirely to this factor, as the train mileage per locomotive in 1917 still showed a loss equivalent to two months' service for each locomotive as compared with the mileage obtained in 1903.

The estimates for 1920 are based on the record of nine months' traffic, assuming a volume of traffic during the last three months of the year proportionately the same as that actually handled during the last three months of 1919. Whether or not this will exactly square with the facts, it is evident from the nine months' records that such a traffic could have been handled, so far as motive power capacity is concerned, with results almost identical to those of 1917.

It is not the purpose of this article to discuss in detail all the causes for the marked decline in locomotive output up to the outbreak of the war. It is significant, however, that this decline was due entirely to the steadily decreasing train mileage per locomotive and that the marked increase in output since 1915 has not been due to improvements in this factor. The cause must therefore be looked for either in the locomotive, or in other facilities affecting the serviceability of the locomotive.

Undoubtedly, large modern locomotives require more frequent shoppings and more attention to running repairs than the motive power of 17 years ago. But it seems incredible that the motive power in service today, made up as it is of units representing every stage of development for at least 20 years, is inherently incapable of rendering in a year more than the equivalent of service that was obtained in ten months from the locomotives of 17 years ago.

May not much of this loss be attributed to the failure of shop and engine terminal facilities to keep pace either with the increasing numbers or increasing weights of locomotives?

During the period under consideration the number of locomotives has increased more than 50 per cent and the average hauling capacity between 65 per cent and 70 per cent. But neither of these increases alone is a measure of the increases which should have been made in facilities for caring for motive power. The combined effect of the two is that there is 2½ times as much tractive capacity to be maintained, repaired and turned as there was 17 years ago, and in some respects this capacity requires more attention per tractive effort unit than did that used at the beginning of the period.

Is it not possible that the failure to provide more than a small part of the needed shop and terminal capacity is costing the railroads the carrying charges on from $100,000,000 to $200,000,000 invested in idle locomotives which, had it been invested in shops and terminals, would have earned a return in reduced maintenance and operating costs?

A Southern Railway Train at Spartanburg, S. C.

President Declines Railway Employees' Requests

Reply to Union Leaders Says Present Agencies Should Settle Differences—Employees Delay Reply

THE VIGOROUS STAND taken before the Railroad Labor Board by General W. W. Atterbury, vice-president of the Pennsylvania and chairman of the Labor Committee of the Association of Railway Executives, against the continuance of national agreements brought forth talk of general railroad strikes, charges and answers. The matter finally reached President Wilson, whom representatives of the labor organization petitioned for the presentation of the issues involved to Congress and representatives of the carriers followed with specific answers to the charges made by the labor leaders. General Atterbury went before the Labor Board on January 31 after the Labor Committee of the Association of Railway Executives had been in session at Chicago for three days. His statement at that time—one of the results of this meeting—was reported in full in the *Railway Age* of February 4 (page 317). The representatives of the employees refused to reply to his remarks immediately, requesting instead the right to be heard before the Board took action on the demands contained therein. This request was granted by Judge R. M. Barton, chairman of the Board, who later set February 7 as the employees' "day at court."

In the meantime, executives of the brotherhoods filed long telegrams to the President, declaring that they did not believe that the carriers were in the financial condition outlined by General Atterbury and attacking the latter for "violating all decent proprieties, disregarding the Transportation Act and flouting existing agencies such as the Interstate Commerce Commission and even Congress itself."

"General Atterbury's policy," the telegram charged, "is to disrupt labor unions, turn public opinion against the employees and place wages on a previous basis so that railway profits might be enhanced when prosperity returned."

In support of these contentions, the telegram reiterated the charges of mismanagement and control by a New York banking group which have been made repeatedly during the past month by various labor leaders and which are under investigation by the Interstate Commerce Commission.

Executives State Position to President

The charges made in the employees' telegram were immediately answered by T. DeWitt Cuyler, chairman of the Association of Railway Executives, who said in a telegram to the President:

> I understand from press despatches a telegram has been sent you by the heads of certain railway organizations. If correctly reported, the charges contained therein are deliberate and gross misrepresentations. They are propaganda intended to discredit private management of railroads in the interests of the Plumb Plan and to defeat efforts which are being made in good faith to abolish rules and working conditions which were adopted as war measures, the continuance of which are causing inefficiency and waste in railway operation that are costing hundreds of millions of dollars.
>
> The charge that the railroads of the country are controlled by a single banking group in New York is untrue and is known to be untrue by every one familiar with railroad affairs.
>
> The charge that since the resumption of private operation, inefficiency and lack of economy have been deliberately encouraged is conclusively disproved by the record of the railroads from March 1 to the end of 1920. In its annual report to Congress on December 9, 1920, the Interstate Commerce Commission stated:
>
> Comparing August, 1920, with August, 1919, the increased mileage had the effect of increasing the car supply 287,694 cars; the increased tonnage per car had the effect of increasing the car supply approximately 104,942 cars.
>
> During this period the railroads increased the average movement per freight car per day 6.3 miles—from 22.3 to 28.6 miles. They increased the average load per car 1.7 tons—from 28.3 to 30 tons. They reduced the accumulation of loaded but unmoved cars from 103,237 on March 1 to practically zero on December 31.
>
> The truth is—as every shipper and traveler knows of his own experience—that the railways were never more efficiently operated than in the last 10 months of 1920. Never before was so much service rendered with each car, each locomotive, each mile of track and each ton of coal.
>
> The charge that the railroads sent cars and locomotives to outside shops for repair because of any dual financial interest is entirely untrue. The Interstate Commerce Commission has already taken jurisdiction over this matter, and the railroads are prepared to fully prove before the Commission the imperative necessity for their action. They will show that the comparisons of cost given were misleading; that the repairs in question were of the heaviest character; that they frequently involved substantial rebuilding; and that so far as possible this equipment was sent to the shops at which it had originally been constructed for the obvious reason that said shops had extra parts, patterns and tools which would enable them to effect these repairs efficiently and promptly.
>
> The major field of imperative economy at the present moment is in the labor cost of railway operation. In 1917 this was approximately $1,700,000,000. During the greater part of 1920 it ran at the rate of approximately $3,700,000,000. The fact is that the labor cost of railway operation grew during the war period to a point where it absorbed the entire increase in railway operating revenues and is at this moment, despite the increase in rates granted by the Interstate Commerce Commission on August 26, 1920, leaving many railroads, in the face of declining traffic, practically stripped of earning power.
>
> When General Atterbury went before the United States Railroad Labor Board and called its attention to the fact that numerous companies cannot even earn their operating expenses under conditions of present costs and traffic, and asked for the immediate abrogation of these agreements, rules and working conditions, he was proceeding in strict conformity with both the spirit and the letter of the Transportation Act. Unless these rules and working conditions had been continued by mutual consent they would have terminated on September 1, 1920, in accordance with the Transportation Act, and would not now be in effect had not the United States Railroad Labor Board, in its wage decision of July 20, 1920, asked the railroad companies to continue them temporarily, pending a hearing.
>
> The fact that this hearing tends to be protracted at a time when the necessity for economy grows with every hour produced a situation requiring, in our judgment, drastic and immediate action.
>
> The suggestion that we should hold a conference with the leaders of the labor organizations offers no solution of the difficulty. Each railway company is prepared to negotiate with its employees proper rules and working conditions adapted to different conditions in various parts of this country. It is utterly impossible for the United States Railroad Labor Board to make uniform rules and working conditions for all the railroads of the country without causing abuses like the present, when, by a mere change in title, four of the employees of the Pere Marquette had to be paid over $9,300 in back pay, without any change in character or volume of work.
>
> It would be equally impossible for any joint conference between all railroads and all organizations of employees to draft a uniform set of rules not subject to the same abuses.
>
> The action requested by General Atterbury on behalf of the railroad companies is the only action which, with government sanction, can free the hands of the railway executives and enable them by orderly procedure with their own men to develop appropriate rules and working conditions.
>
> All suggestions of other investigations or of the transfer of this subject to some other body are not only not in accordance with the Transportation Act but necessarily involve that very delay, the avoidance of which was the purpose of General Atterbury's presentation.
>
> The only rules that stand the tests of practical operation and do not involve endless controversy are rules which are negotiated between each management and its own men and have behind them a common understanding. The opportunity of securing this is requested by the railroads in the interests of that efficient and economical operation required by the Transportation Act and is not only for the purpose of enabling the railroads to achieve the

earning power contemplated under that Act, but also in the interests of an ultimate reduction in transportation rates to the public.

Last, but not least, it is in the interests of the men who work upon these railroads. As General Atterbury stated, we recognize that as the wages of railroad employees were the last to go up, they should also be the last to come down, and if by restoring the conditions necessary to efficiency and economical operation, the railroads can postpone for a reasonable period the reduction of basic wages which will ultimately be required they will be only too glad to do so in the interests of the great body of their employees.

The pressing financial necessities of the railroads are such that if denied the opportunity of initial economy through proper rules and working conditions their only other recourse must be in a reduction of basic wages.

The railway executives are proceeding in this matter with the keenest sense of obligation to the public. They feel that they are trustees of a great public interest in the reduction of railway operating expenses to a normal level. They feel that in moving in this matter they are representing, not only their own interests, but the interests of the farmer, the consumer, labor and manufacturers in other industries, and the railway employees themselves. They have every confidence that at a time when the various industries and workers of the country are each making their respective contributions to a decline in the cost of living and a return to normal conditions, the great body of railway employees themselves will certainly not refuse to make their similar contribution.

President Wilson on February 6 replied to the telegrams addressed to him by the railroad labor leaders and the railroad executives at Chicago last week, declining to interfere in any way, during the last month of his administration, in the controversy between the railroad executives and the labor leaders regarding the abrogation of the national agreements. The labor leaders had asked for a Congressional investigation of the railroad situation but the President in his reply indicated confidence that the case is now in the hands of the proper tribunal and he therefore referred the copies of the telegrams to the board and to the Interstate Commerce Commission for such action as they may deem wise. The President's action was taken on recommendations made to him by John Barton Payne, director general of railroads, to whom the telegrams were submitted on their receipt last week. The President's reply to the labor leaders, copy of which was also sent to the executives, was as follows:

I have carefully considered the several telegrams addressed to me dealing with the labor questions and railroad management now under consideration by the Railroad Labor Board in Chicago.

The transportation act, approved February 28, 1920, to a greater extent than any previous legislation places all questions dealing with finances and railroad management and necessary rates under the jurisdiction of the Interstate Commerce Commission; hence all questions involving the expense of operation, the necessities of the railroads, and the amount of money necessary to secure the successful operation thereof are now under the jurisdiction of the commission. At the same time the act placed all questions of dispute between carriers and their employees and subordinate officials under the jurisdiction of the Railroad Labor Board, now sitting in Chicago.

This board is composed of three members constituting the labor group, representing the employees and subordinate officials of the carriers; three members constituting the management group, representing the carriers, and three members constituting the public group, representing the public. So far as I am advised, the board may be relied on to give careful and intelligent consideration of all questions within its jurisdiction. To seek to influence either of these bodies upon anything which has been placed within their jurisdiction by Congress would be unwise and open to grave objection.

It would be manifestly unwise for me, therefore, to take any action which would interfere with the orderly procedure of the Interstate Commerce Commission or of the Railroad Labor Board; and all the matters mentioned in your telegram are within the jurisdiction of one or the other of these bodies, and in their action I think we may repose entire confidence.

In view of the foregoing, it does not seem wise to comply with your suggestion that the matter be submitted to the Congress, and the only action deemed necessary is to submit copies of the telegrams received from you and from the representatives of the railroad executives to the Interstate Commerce Commission and to the Railroad Labor Board for such action as these bodies may deem wise in the premises. This will be done.

Jewell Claims Vindication in President's Reply

B. M. Jewell, president of the railroad department of the American Federation of Labor, declared that the president's message was a complete vindication of the stand taken by the unions in that it "makes it perfectly clear that the board should confine its jurisdiction strictly to the controversy as to wages and working conditions, leaving financial matters to the Interstate Commerce Commission." His statement follows:

The telegram of the president is a complete vindication of our position. I am delighted at what he has said: He has made it perfectly clear that the board should confine its jurisdiction strictly to the controversy as to wages and working conditions, leaving financial matters to the Interstate Commerce Commission.

Mr. Atterbury, therefore, made a serious mistake in applying to the board for financial assistance. We did not consider the facts warranted his prediction that the transportation industry was threatened with immediate bankruptcy. Evidently the president did not think so either. We did not feel that a financial disaster was impending, as predicted by Mr. Atterbury, but considered it our duty to call his statement to the attention of the president so that if the president considered the Atterbury statement seriously proper measures might be taken.

The president has stated unequivocally that financial appeals should be restricted to the Interstate Commerce Commission and not dragged before the Railroad Labor Board. Mr. Atterbury made a serious mistake by his ill-considered action and has placed the railroad executives in an embarrassing position. It is to be deplored that the public was temporarily deceived and that the orderly proceeding of the board was temporarily interrupted by his misguided activities.

Now that the financial aspects of the matter are clearly settled we shall have to take up in answer before the board certain other features of Mr. Atterbury's statement. He has cast aspersions upon railroad employees which we cannot permit to pass uncontroverted. We feel that it is our duty also to show that Mr. Atterbury is in reality the railroad representative of the sinister, anti-union movement which is being heavily financed under the guise of a so-called open shop campaign. We shall do this in an orderly way before the Railroad Labor Board.

Mr. Jewell again attacked General Atterbury's position the following day in a statement issued to the press in which he said:

"My criticism of Mr. Atterbury's action is that if the transportation industry is in the deplorable condition stated by Mr. Atterbury, no time should have been wasted in applying to the Labor Board, which is powerless to act, but application should at once have been made to those public agencies which could prevent the catastrophe which Mr. Atterbury predicts. Why isn't application made to the Interstate Commerce Commission? Why don't the bankers and bonding houses appear before the committees of the House and Senate? Why aren't the railroad presidents, who are now compelled by the bankers to appear before the country practically as beggars seeking public charity, put to work on this problem so that it may be adequately treated by the proper public agencies?"

Atterbury Answers Claims

W. W. Atterbury, Chairman of the Labor Committee of the Association of Railway Executives, issued a statement on Tuesday in reply to the assertion of B. M. Jewell, representing the employees, that President Wilson's reply meant that the Board would consider only wages and working conditions, and that financial questions would be considered by the Interstate Commerce Commission.

"His hope that the financial results of existing rules and working conditions can be hidden from either the Labor Board or the public will not be realized," said Mr. Atterbury's statement.

"He would maintain indefensible waste and inefficiency even at the cost of destroying the earning power of the railroads or of compelling them to go to the Interstate Commerce Commission for still higher rates.

"The producers and consumers of the country cannot support Mr. Jewell's program. It requires no conspiracy against

union labor to explain their attitude or mine. The railroads are struggling to regain the reasonable productivity of a considerable part of their employees, now seriously impaired by the rules and working conditions coming over from the war. That conspiracy is the conspiracy of the entire country."

This reply was followed in turn by the issuance of two statements by General Atterbury in both of which he presented evidence to sustain his contentions made before the board on January 31. The first statement said:

The railways have asked the Railroad Labor Board to approve the re-establishment of the agreements, rules and working conditions in effect on December 31, 1917, because they believe it is absolutely necessary to effect economy by reduction of the present huge railway payroll. They believe that this reduction of the payroll can be effected at this time with more justice to railway employees and the public by establishing rules and conditions of work which will make practicable a great increase in the efficiency of labor and of railway operation, than by a reduction of basic wages, except those of unskilled labor.

The labor leaders, in public statements, have sought to represent the plan proposed by the railway executives as intended, not to benefit all concerned by increasing the efficiency of operation, but to destroy rights and privileges to which the employees are entitled. No class of men, however, has any right to profit at the expense of the public by agreements, rules and working conditions which cause great inefficiency and waste, and facts regarding the present railroad payroll show that it is being enormously inflated by inefficiency and waste.

The most concrete and abundant evidence of the inefficiency and waste being caused by present rules and working conditions is afforded by the statistics regarding the payroll of the employees in the shops. Since the national shop crafts agreement is the principal one now under consideration by the Railroad Labor Board, statistics regarding the payroll in the shops are most pertinent at the present time.

In the year 1917, before government operation was adopted, the railways employed 302,828 machinists, boilermakers, blacksmiths, electricians, air brakemen, car inspectors, car repairers, other skilled shop employees, and machinists' helpers and apprentices. In 1920, when the number of locomotives and cars to be maintained was only slightly larger than in 1917, they had 443,774, an increase of 140,946, or 47 per cent. The total wages paid to those employees in 1917 was $317,879,549, while in 1920, after the advance in wages granted by the Railroad Labor Board last July, their wages were running at the rate of approximately $890,000,000 a year, an increase over 1917 of 180 per cent.

Another class of employees included in one of the national agreements is the clerks. In 1917 the railways employed 184,063 clerks, while in 1920, when business was normal, they were employing 238,693 clerks, an increase of 29 per cent. The total wages paid to clerks in 1917 was $189,009,506. After the wage award made by the Railroad Labor Board the wages of the clerks were running, as near as can be estimated, at the rate of $399,300,000 a year, an increase of 112 per cent.

Another of the classes of employees included in one of the national agreements is the maintenance of way employees. In 1917 the railways had 350,000 section men and other unskilled laborers, and in 1920, 376,000. The wages paid to them in 1917 amounted to $220,000,000, while, after the wage award made by the Railroad Labor Board, their wages, as near as can now be estimated, were running at the rate of $476,000,000, an increase of 112 per cent.

It requires only a glance at these figures to see that a very large part of the increase in the amount of wages paid to each of the classes of employees mentioned was due, not merely to the advances made in wages, but to an abnormal increase in the number of employees. This increase in the number of employees, in turn, was due to rules and working conditions which destroyed the efficiency of labor, reduced the output per man and rendered it necessary, if needed maintenance work on the railways was to be done, to employ a much larger number of men. The increase of over 140,000, or 47 per cent, in the number of certain classes of employees in the shops is especially significant. It has been charged that the railways turned over the repairs of large numbers of locomotives and cars to outside plants and thereby took work away from their own men. As a matter of fact, the inefficiency of labor in the shops was so great that in spite of the fact that over 50 per cent more men were on the payrolls than in 1917 it was impossible to get all the needed repairs to equipment done in the railways' own shops.

The total number of employees of the railways increased under government control by 261,000. It is a fact of the highest significance in its bearing upon the matter of agreements, rules and working conditions, whose nullification we have asked the Railroad Labor Board to approve, that of this increase 232,563 occurred in shop employees, clerks and maintenance of way employees, with whom the Railroad Administration made the three principal national agreements. It would be difficult to cite better evidence of the deadly efficiency destroying effect of these agreements. The railways, in asking the Labor Board's approval to return to the rules and working conditions in effect at the end of 1917, are merely asking the opportunity to begin a restoration of the efficiency of labor which must be attained in order to secure efficient and economical operation of the railways. The public returned the railways to private operation in the belief that it would be more efficient and economical than government operation. The Transportation Act requires efficient and economical operation of the railways. Efficient and economical operation cannot, however, be secured without a removal of the great restrictions upon and obstacles in the way of efficient management which are set up by rules and working conditions which were adopted as war measures. The railways desire to treat their employees with entire fairness. All charges to the contrary are baseless. They cannot, however, assume the responsibility for consenting any longer to a continuance of conditions which make efficient and economical operation impossible.

General Atterbury authorized the second statement as follows:

When I went before the United States Railroad Labor Board on January 31 there was an emergency requiring prompt and energetic action by the Board. I said:

Many railroads are not now earning, and with present operating costs and traffic, have no prospect of earning even their bare operating expenses, leaving them without any net return and unable to meet their fixed charges.

Since I made the above statement I have been advised by Thomas DeWitt Cuyler, chairman of the Association of Railway Executives, of the result of a canvass of the operating results of most of the railways of the country for the month of January. It is understood, of course, that it is impossible to close the actual accounts so soon after the end of the month, and that the results of the latter part, therefore, have to be estimated.

This canvass shows that 36 railroads estimate that they failed to earn even their operating expenses for the month of January. Among these roads are: The Atlanta, Birmingham & Atlantic; the Buffalo & Susquehanna; the Central of Georgia; the Detroit, Toledo & Ironton; the Erie; the Great Northern; the Gulf & Ship Island; the Hocking Valley; the Long Island; the Minneapolis, St. Paul & Sault Ste. Marie; the Maine Central; the New York, New Haven & Hartford; the Northern Pacific; and the Philadelphia & Reading.

While earning their operating expenses, 28 additional roads estimate that they did not earn their taxes and fixed charges during the month of January. Among these are: The Arizona Eastern; the Atlantic Coast Line; the Baltimore & Ohio; the Boston & Maine; the Chicago, Indianapolis & Louisville; the Chicago, Milwaukee & St. Paul; the Chicago, Rock Island & Pacific; the Lehigh Valley; the Minneapolis & St. Louis; the Missouri Pacific; the Norfolk Southern; the Pennsylvania; the Pere Marquette; the Western Maryland; and the Wheeling & Lake Erie.

Under present traffic and operating conditions these were the results despite the fact that the 64 companies referred to—of which only a partial list is given above—have, in the aggregate, decreased their labor cost of operating by laying off approximately 200,000 employees since September 1, 1920.

These companies have a total main line mileage of more than 100,000 miles and constitute approximately 40 per cent of the railroad mileage of the country.

In addition, there are other companies of well established earning power under normal conditions which expect their earnings for January to exceed their fixed charges by only a narrow margin.

The railroads cannot believe that the United States Railroad Labor Board, which, by its wage decision of July 20, 1920, has kept these national agreements, rules and working conditions in existence since September 1, can or will deny to the railroads and to the public the relief requested.

Included in the above figures of lay-offs and mileage are a number of companies which I have not specifically mentioned, which, in previous years, have also had difficulty in approximating a fair earning power. In a developing country like the United States there always has been a number of such railways. Their economic and traffic conditions have not justified the payment of trunk line wages nor the observance of trunk line conditions of work, even when these have been far more reasonable and less costly than at present. Nevertheless, the augmentation of their difficulty only goes to illustrate that it is economically unsound, and can only be fraught with disaster, to attempt to compel all of the railroads of the country, regardless of their differing conditions, to meet precisely the same wages and the same working arrangements.

Our application to terminate immediately the war-time working

arrangements which do apply alike, regardless of these differing conditions, is simply the attempt to secure government sanction for the necessary process whereby these railroads can again fit their expenses and operating rules to the conditions of the territories whose public servants they are.

All the suggestions for laying this matter before Congress or some other public body, with the implication that if not so done the condition is not really serious, will, I am sure, mislead no one.

Congress has passed the Transportation Act. The Interstate Commerce Commission, pursuant to that Act, has fixed rates. Nevertheless, the railroads cannot achieve their earning power under continuing abnormal and inflated operating expenses, of which the labor cost is the principal item. Hence, in accordance with the letter and spirit of the Transportation Act, the railroads are before the one body which ought to grant them relief—namely, the United States Railroad Labor Board.

Jewell Asks for More Time

While both the carriers and the employees were publicly defining their respective positions in this controversy, Mr. Jewell petitioned the Labor Board for additional time in which to prepare his reply to General Atterbury's requests. This petition was opposed by E. T. Whiter, who presented a letter on this subject written by General Atterbury and vigorously opposing any further extension of time. After consideration in executive session, however, the Board granted Mr. Jewell's request and February 10 was set as the date upon which he would be heard.

Whiter Concludes Railroad's Presentation

Following the refusal of representatives of the labor organizations to reply to General Atterbury's testimony on January 31, Chairman Barton of the Board directed Mr. Whiter to continue with his testimony regarding the national agreements until the requests made by General Atterbury could be considered by the Board in executive session. Mr. Whiter accordingly discussed in turn the agreements and proposed agreements with the Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Employees, the Brotherhood of Railway Signalmen of America, the International Brotherhood of Stationary Firemen and Oilers, the Order of Railroad Telegraphers, the American Train Despatchers' Association, the Masters, Mates and Pilots of America, and the International Association of Railroad Supervisors of Mechanics. In closing his presentation in the case, Mr. Whiter said:

In closing the statements of the railroads with reference to the requests under consideration in this hearing, we desire to emphasize the statements contained in our opening remarks:

First. That there is no obligation upon the individual railroads to accept and adopt these agreements, wage orders, etc., to which they were not a party; that there is no obligation in law or reason that they should be required to adopt these intricate, complicated and extensive regulations, which were applied throughout the United States, with utter disregard of conditions on the individual properties or the extraordinary, in many cases grotesque, results which followed. Further, that the necessity for specific understanding to continue these agreements was plainly recognized by the labor organizations who were parties to such agreements, as shown by their letter of March 24, 1920, which said:

> During government control of railroads, general orders, supplements, addenda, national agreements and interpretations thereof were issued by the United States Railroad Administration, as result of negotiations conducted with the organizations parties to this conference.
>
> These general orders, supplements, addenda, national agreements and interpretations thereof are continued in effect until September 1, 1920, except as amended by mutual agreement between the organizations and managements of the railroads and carriers covered by the Transportation Act of 1920.
>
> In the interest of successful operation, it is desirable that definite agreements be had prior to September 1, 1920, providing for the preservation of the conditions of employment thereafter, and that these agreements be entered into at the earliest possible moment.

Further that the terms and provisions of the Transportation Act have not been complied with, with respect to the requirement that bona fide efforts must be made to reach agreements between the parties directly concerned before the controversies can be submitted to your Board. We hold that this is a separate and distinct phase of the problem before the Board and that this phase should be disposed of by the Board independently of the merits of the respective agreements and the individual rules contained therein.

Second. Through the wage orders, addenda, supplements, interpretations, etc., which we have brought to the attention of the Board, we feel that the Board will recognize that through the provisions of Decision No. 2 of the Labor Board that:

> The board assumes as the basis of this decision the continuance in full force and effect of the rules, working conditions and agreements in force under the authority of the United States Railroad Administration. Pending the presentation, consideration and determination of the questions pertaining to the continuation of modification of such rules, conditions and agreements, no changes therein shall be made except by agreement between the carrier and employees concerned. As to all the questions with reference to the continuation or modification of such rules, working conditions and agreements, further hearings will be had at the earliest practicable date, and decision thereon will be rendered as soon as adequate consideration can be given.

Many bases of classification of service for purposes of pay, application of rules, etc., have been continued, notwithstanding that by reference to the terms of the agreements themselves, they terminated February 29, 1920; also by reference to Circular 121 of the director general it will be found that he states that decisions by the Railroad Administration, Boards of Adjustment, staff officers, etc., were not to extend beyond the termination of federal control of the railroads, viz: 12.01 A. M. March 1, 1920. These Boards of Adjustment and staff officers have continued to render decisions, and so far as known, may continue to render decisions as long as they exist, affecting the responsibility of the Railroad Administration, in cases occurring during the period of federal control. Many decisions have been rendered since the date of Decision No. 2. Some of these decisions have been incorporated in our presentation. We feel that your Board certainly did not in Decision No. 2 base your conclusions on decisions of these Boards of Adjustment which had not theretofore been rendered.

From the provisions of Decision No. 2 quoted herein, there would not appear to be any doubt of the intention of this Board to continue the bases of pay resulting from the decisions of proper authorities of the Railroad Administration, but it is very properly a question whether this Board intended to vitalize decisions which by instructions of the director general were to only apply up to the end of federal control and continue them in the same manner as it did acts of the Railroad Administration prior to the date of its decision.

These decisions have such extensive ramifications and are so utterly out of all reason in the light of practical conditions and the extravagant payments resulting, as repeatedly stated herein, that we feel the only practical way to properly dispose of these complications is by negotiation between the managements of the individual properties and the proper representatives of their employees, and that no Railroad or tribunal could justify such expenditures and expect that the patrons of the railroads should pay rates for producing revenues to be expended in such a manner.

"Independent" Organizations Testify

Representatives of the various "independent" organizations who have been fighting since the creation of the Board for the right to be heard as organizations in the present case began the presentation of their case to the Board on February 7. J. L. Eldridge, vice-president of the Railroad Yardmasters of America, P. F. Richardson, president of the American Federation of Railway Workers, T. A. Austin, president of the Dispatchers, Telegraphers and Agents (an organization on the Pennsylvania), P. J. Coyle, president of the Brotherhood of Railroad Station Employees, E. H. Morton, president of the Order of Railroad Station Agents, M. H. Comerford, International Union of Steam and Operating Engineers, T. H. Eiland, president, Colored Railway Trainmen, and R. L. Mays and O. Long, Railwaymen's International Benevolent and Industrial Association, consecutively presented testimony for their respective organizations. In practically all cases the eight-hour day with time and a half for overtime was asked for the employees represented, instead of the monthly rates upon which the majority of these employees are now working.

Jewell Presents Rebuttal

Mr. Jewell in the interval granted him to prepare a reply to General Atterbury repaired to New York and retained Frank P. Walsh, the labor counsel, and W. Jett Lauck, economist, and a battery of publicity men to assist in bringing a conspiracy charge before the Board. Mr. Jewell planned to ask for postponement of consideration of the question of national agreements and for a hearing upon the

evidence the unions wished to present in support of their charge that railway executives and financiers have conspired to re-establish autocratic control of the transportation industry.

Chairman Barton in opening the session on February 10 read a resolution passed by the Board which prohibited the presentation of such evidence and which pointed out that the Interstate Commerce Commission is the proper body before which to present such charges.

This action of the Board entirely disrupted Mr. Jewell's plans, and he immediately asked for a ten minute recess to formulate a new plan of attack. The Board's resolution also denied General Atterbury's requests for immediate abrogation of the National Agreements and for the right to pay unskilled labor the prevailing rate in the territory where they are employed. The resolution, after reciting the history of the present case, stated that the Board must hear all of the evidence before ruling on the National Agreements and that it was powerless to grant General Atterbury's request regarding unskilled labor because the matter has not been brought before the Board according to the procedure outlined by the Transportation Act.

After a short recess Mr. Walsh began a presentation on behalf of the employees. He confined his remarks to replies to General Atterbury, attacking the Pennsylvania and charging that his statements are misleading. That the railroads are in a precarious financial condition was denied by Mr. Walsh, although the statement was not accompanied by proof. He also asked the Board to subpœna a list of railway executives "to show that the application of the rules of the National Agreements was not wasteful." This list includes the following: R. S. Lovett, J. D. Rockefeller, Jr., W. D. DeForest, A. H. Smith, G. F. Baker, Samuel Rea, H. S. Vanderbilt, L. F. Loree, A. J. County, F. H. Davis, W. W. Atterbury, Howard Elliott, Julius Kruttschnitt, Fairfax Harrison, A. H. Harris, C. Hayden, C. Steele, J. E. Reynolds, E. T. Stotesbury, T. DeWitt Cuyler, H. Walters, M. H. Smith, A. W. Krech, E. V. R. Thayer and C. E. Ingersol.

Colonel Bugg Explains A. B. & A. Situation

B. L. Bugg, president of the Atlanta, Birmingham & Atlantic, in connection with the refusal of the employees of that road to accept a reduction in pay, has issued a statement in which he declared that if the people of Georgia feel that the road is of value to the commonwealth, it is for them to voice that feeling without delay. The road is now losing $1,000,000 a year. It is out of the question to ask for increased freight or passenger rates. If they were granted people would travel over other lines, and ship their freight over the lines of competitors. Continuing, Colonel Bugg says:

"If we offered the road for sale, we couldn't even find a prospective purchaser. No one wants to buy a property that is losing $1,000,000 annually. Our payroll has increased almost three-fold for each employee since the war began. If the reduction we ask for is granted, we can continue operation. If it is refused, right at this time, I see nothing for the owners of the property to do but get what they can out of it by scrapping the whole thing. The controversy concerns the people of Georgia to a far greater degree than merely their interest in the wage troubles. The question has already been raised at the hearing before the board at Chicago whether or not the road is of sufficient value as a public servant to justify its continuance, and if in case it should be scrapped, the necessities of the communities it serves would not be cared for by other existing roads in stronger financial condition.

"If the people of Georgia feel that this road is of value to the state and its citizens, and that it performs a public service that cannot be dispensed with without imposing great inconvenience upon the industry of the state and loss upon its citizens calamitous in magnitude, it is time for some expression to be given and not wait until decisions and judgments have been rendered which will start this property on the way to the junk pile. Has not the state of Georgia and its citizens an interest here that is superior to that of the owners of the property or its employees?

"Although the road has been in the courts for a long time, it has always been able to pay its operating expenses up until the time it was taken over by the federal government. Since the establishment of our road, the tax values in the counties traversed by its lines have increased from $50,000,000 to $360,000,000 and a large part of that territory is served by us exclusively. The arable lands for five miles on each side of our right of way have increased $40,000,000 in value during that same time.

"More than 1,000,000 people are served by our line exclusively. If this road should be scrapped they would be without rail transportation. And we furnish absolutely the only competition for many of our most important towns, including Fitzgerald, Douglas, Moultrie, Waycross, Thomasville, Vienna, Montezuma and LaGrange. And there's no part of the system that can be lopped off and permit the rest of the system to remain in operation. We are getting about the same returns from each of our branches."

Railway Mileage of the World

THE BUREAU of Railway Economics has issued the following compilation showing the railway mileage of the various countries of the world as of 1917, taken from the Archiv fur Eisenbahnwesen for July-August, 1919:

Continent and country	Miles of railway
AMERICA:	
Alaska	655
Argentina	22,310
Barbados	109
Bolivia	1,502
Brazil	16,557
British Guiana	104
Colombia	708
Canada	30,788
Chile	5,014
Costa Rica	546
Cuba	2,331
Dominican Republic	400
Dutch Guiana	37
Ecuador	652
Guatemala	613
Haiti	140
Hawaii	88
Honduras	150
Jamaica	196
Martinique	139
Mexico	15,840
Newfoundland	874
Nicaragua	200
Panama	298
Paraguay	291
Peru	1,728
Porto Rico	340
Salvador	199
Trinidad	108
United States	259,555
Uruguay	1,639
Venezuela	634
Total—America	364,745
ASIA:	
Arabia (incl. Cyprus)	61
Asia Minor (incl. Syria)	3,337
British East Indies	35,277
Ceylon	671
China	6,838
Cochin China, Cambodia, Anam Tonkin	1,490
Japan (incl. Chosen)	8,855
Malay States (Borneo, Celebes, etc.)	857
Malacca	57
Dutch East Indies	1,773
Persia	34
Pondicherry	59
Portuguese Indies	51
Philippines	691
Russia (Asiatic)	9,886
Siam	976
Total—Asia	70,913

Continent and country	Miles of railway
AFRICA:	
Algeria and Tunis	4,220
Belgian Congo	1,038
British East Africa	2,355
French Africa	2,449
German Africa	2,595
Italian Africa	106
Morocco	777
Portuguese Africa	1,183
Union of South Africa	11,237
Total—Africa	29,921
AUSTRALIA:	
New South Wales	4,133
New Zealand	2,973
Northern Territory	145
Queensland	4,867
South Australia	2,168
Tasmania	701
Victoria	3,871
Western Australia	3,665
Total—Australia	22,523
EUROPE:	
Austria-Hungary (incl. Bosnia and Herzegovinia)	28,704
Belgium	5,477
Bulgaria	1,509
Denmark	2,642
Finland	2,429
France	31,958
Great Britain	23,696
Germany	40,381
Greece	1,012
Italy	11,337
Luxemburg	326
Malta, Jersey, Man	68
Montenegro	12
Netherlands	2,113
Norway	1,975
Portugal	1,854
Roumania	2,388
Russia (European)	36,219
Serbia	977
Spain	9,538
Sweden	9,290
Switzerland	3,293
Turkey (European)	1,431
Total—Europe	218,628
RECAPITULATION:	
America	364,745
Asia	70,913
Africa	29,921
Australia	22,523
Europe	218,628
Grand total	706,730

Railway Funded Debt

THE BUREAU OF RAILWAY ECONOMICS has compiled a table showing the railway funded debt actually outstanding, maturing each year from 1920 to 1949 and each 10-year period thereafter, compiled from the annual reports of the carriers to the Interstate Commerce Commission as follows:

RAILWAY FUNDED DEBT (ACTUALLY OUTSTANDING) MATURING EACH YEAR FROM 1920 TO 1949, AND EACH TEN YEAR PERIOD THEREAFTER

Railways of Class I—United States

Year of maturity	Mortgage bonds	Collateral trust bonds	Income bonds	Miscellaneous obligations	*Total
1920..	$102,098,600	$33,088,000	$3,898,000	$15,090,140	$154,174,740
1921..	73,904,585	227,013,900	.....	21,554,288	322,472,773
1922..	57,983,500	44,579,000	.....	33,633,260	136,195,760
1923..	77,657,000	4,636,000	.....	354,597	82,647,597
1924..	9,088,000	3,000,000	.....	7,812,447	19,900,447
1925..	143,423,575	44,991,630	.....	48,391,252	236,806,457
1926..	47,112,000	24,288,000	.....	468,597	71,868,597
1927..	55,793,442	7,260,000	.....	26,979,822	90,033,264
1928..	121,772,100	38,699,500	.....	44,597	160,516,197
1929..	95,693,754	98,293,000	18,892,062	83,814,593	296,693,409
1930..	86,178,600	.....	4,543,907	22,275,853	112,998,360
1931..	154,101,520	4,705,000	6,000	15,044,597	173,857,117
1932..	52,629,000	3,000,000	10,000,000	50,410,397	116,039,397
1933..	112,454,535	.....	.....	72,000,597	184,455,132
1934..	228,453,000	16,000,000	9,104,000	80,143,744	333,700,744
1935..	55,069,000	.....	13,849,250	115,386,111	184,304,361
1936..	103,641,000	.....	.....	44,597	103,685,597
1937..	119,573,717	4,840,000	.....	5,246,697	129,660,414
1938..	120,557,445	8,349,000	1,349,500	1,404,597	131,660,542
1939..	147,998,339	.....	890,450	4,505,662	153,394,451
1940..	145,877,340	.....	.....	5,044,597	150,921,937
1941..	113,326,150	.....	.....	44,597	113,370,747
1942..	75,091,000	.....	.....	5,138,597	80,229,597
1943..	105,535,149	.....	2,000,000	44,597	107,579,746
1944..	55,000	.....	.....	44,597	43,599,597
1945..	100,519,660	.....	286,250	44,597	100,850,507
1946..	69,328,500	40,176,000	370,000	44,597	109,919,097
1947..	157,310,000	.....	.....	10,035,597	167,345,597
1848..	164,207,805	7,272,000	.....	38,585,797	210,065,602
1949..	234,466,800	34,100,500	25,007,000	44,597	293,618,897
1950 to 1959.	$1,176,507,704	$128,059,700	$69,570,643	$88,057,274	$1,462,195,321
1960 to 1969.	779,042,094	.....	49,156,923	10,071,000	838,270,017
1970 to 1979.	51,350,000	.....	.....	.....	51,350,000
1980 to 1989.	340,910,000	20,118,000	18,095,000	.....	379,123,000
1990 to 1999.	1,019,060,505	9,143,000	51,346,000	.....	1,079,549,505
2000 to 2009.	154,750,305	11,180,900	24,661,125	5,500,000	196,092,330
2009 & upward	186,820,300	.....	.....	.....	186,820,300
Not distributed	5,337,743	.....	7,615,000	16,776,246	29,728,989
Total entire period	$6,888,178,767	$812,793,130	$310,641,110	$784,083,135	*$8,795,696,142

*Does not include equipment obligations amounting to $271,161,225 and also $11,750 receipts outstanding for funded debt. Adding these amounts to the total of $8,795,696,142, the total funded debt actually outstanding of the railways of Class I amounted to $9,066,869,117 on December 31, 1919, which is approximately 82 per cent of the total funded debt of all steam roads in the United States. Foregoing returns do not include data for the Pittsburgh, Shawmut & Northern R. R.

Increasing Car Mileage*

By L. R. Smith
Supervisor of Transportation, Southern Pacific, San Francisco

THE CAR DISTRIBUTOR and his force form the nucleus around which the fabric of increased car mileage must be built. Therefore, it is most important that the car distributor be a specialist in car handling, and that he be surrounded by a competent and sufficient force. The car distributor's bureau is a poor place to practice extreme economy. In the conduct of his office, he should have the necessary information from all sources, including a daily report from each agency station showing the number of each car on hand at that station at a given time each day, the date of receipt, whether loaded or empty, loading or unloading, an explanation of the delay, if delayed, and whether required for loading, if empty. Each local way-freight conductor should render a report of cars on hand, set out and picked up at non-agency stations, showing loads and empties, and any other information which may be required to insure prompt disposition.

The car distributor's territory should be so restricted and his duties so limited as to afford him the time necessary to analyze the reports received, associate empty equipment with outstanding orders, and direct the attention of the proper officer to delays or improper movements.

Above all the desired results depend upon the education of those interested in car movement as to the actual value of a car day. Price lists show the values of materials and scrap. Requisitions for supplies are checked carefully, as they represent actual money on their face. Everyone knows the rate of per diem paid upon foreign cars, and to a considerable extent that figure influences prompt movement. But few realize the actual value of a car per day, or that it has an actual monetary value. "Price lists" showing the money valuation per day for each class of car for the prevailing season, placed before each employee involved in the handling of cars; the same information placed before shippers in such way as to impress upon them the effect wastage of car time has upon them will soon have everyone watching for possible leaks in car days as they are watching other items previously mentioned, and when it is made clear that by "picking up" a

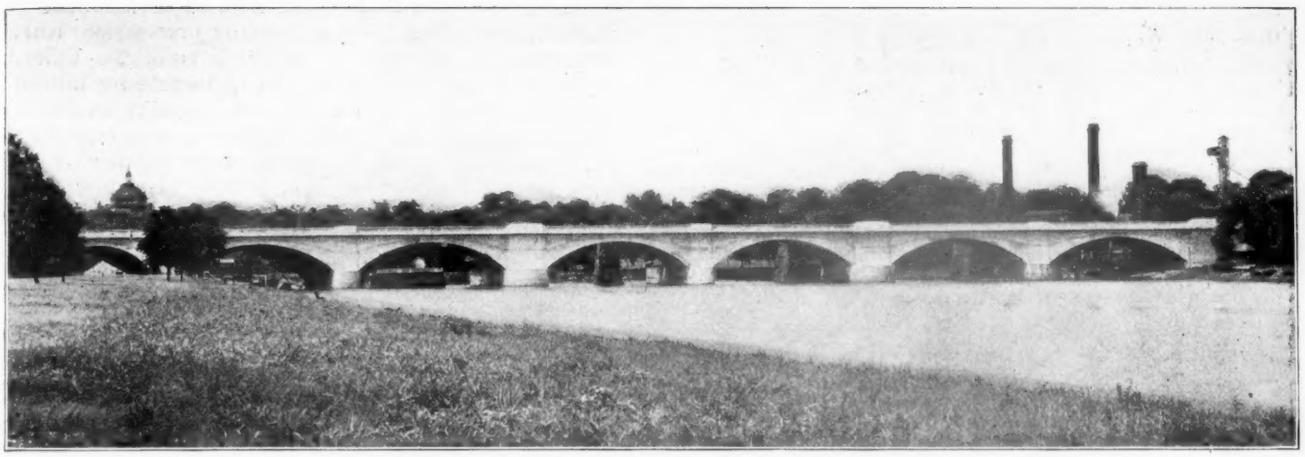
By M. Nicholson
General Manager, C. M. & St. P., Seattle, Wash.

Increased car miles can be obtained only by interesting every employee who has an opportunity to speed up the loading, unloading or movement of a car. Employees have been over-instructed through letters, circulars, bulletins, etc., but the personal appeal to the employee to do his best is the most effective. If the car repairer responsible for the repair of the car and its movement to and from the repair track; the roundhouse organization responsible for furnishing power for the prompt movement of trains; the agent, despatcher and yard forces who have the direction of movements in hand; the track forces who have the upkeep of the tracks in their charge, are all directly interested in speeding up the movement of a car, and if the individual employee in each department sees only the one object of avoiding delay to cars, whether loaded or empty, there will be a decided improvement in the average miles per car per day, and the traffic of the country will be moved with much greater despatch than heretofore and without additional cars. Additional tracks, roundhouse facilities, and power, are essential long before any increase in the number of cars.

*Papers presented in the *Railway Age's* contest on Increasing Car Mileage.

Photo from Keystone View Co.

Train Ferry at New Orleans



The Columbia Bridge Presents an Attractive Appearance

New Bridge Marks Progress in Transportation

Four-Track Structure of the Philadelphia & Reading Crosses Schuylkill River at an Historic Site

By Harry B. Glisson
Assistant Engineer, Philadelphia & Reading, Philadelphia, Pa.

OCCUPYING THE SITE of what was one of the first large railroad bridges constructed in this country, the Columbia bridge of the Philadelphia & Reading in the Fairmount Park section of Philadelphia, Pa., is now well along towards completion. The crossing of the Schuylkill river at this point has for nearly a century carried a large amount of traffic in and out of that city. It is the growth of this traffic in connection with the use of heavier power that has made it necessary to replace a double-track through-truss iron bridge, the successor of the original bridge, with a four-track reinforced concrete structure of modern design and pleasing appearance. A brief history of the operations over both the original bridge and the new, forms, in a measure, an interesting commentary on the growth of the transportation system of this country.

The original Columbia bridge was built by the canal commissioners of the state of Pennsylvania in 1834 for the Philadelphia & Columbia Railroad, one of the earliest steam lines constructed in Pennsylvania, and, in fact, in the United States. The bridge spanned the Schuylkill river between Rockland and Belmont, in Fairmount Park, Philadelphia. It was 1,050 ft. long, with seven spans and carried both a double-track railway and a carriage way, with a total width of superstructure of 48 ft. It was built of white pine timber and, owing to the careful manner in which it had been protected from the weather, the bridge when removed in August, 1886, was as good as when first constructed in 1834.

Turning Two Arches at One Time with Steel Centering

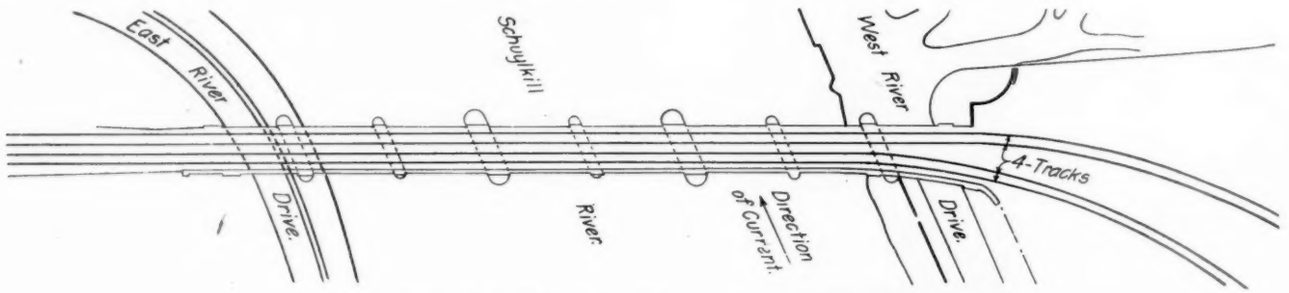
Interesting History

This wooden structure was the first railroad bridge of any considerable size constructed in the United States, and was the oldest wooden railroad bridge in existence at the time it was dismantled and removed in 1886 to make way for an iron superstructure. The following description written about

the time of the removal of the old wooden structure in 1886 is of interest:

Strange burdens have been borne across the old bridge during its half century of usefulness. Unnumbered thousands of pedestrians have tramped its floors, and vehicles of every description have rolled along through its dark tunnel-like structure. Not only have freight and passenger trains crossed the river upon its substantial arches, but even canal boats have been trundled across and brought into the very heart of the city of Philadelphia.

Until the construction of the Pennsylvania Railroad numerous canal boats were built in detachable sections. Freight was loaded on these crafts at Pittsburgh and other points and the boats were taken by land and water to their destinations.

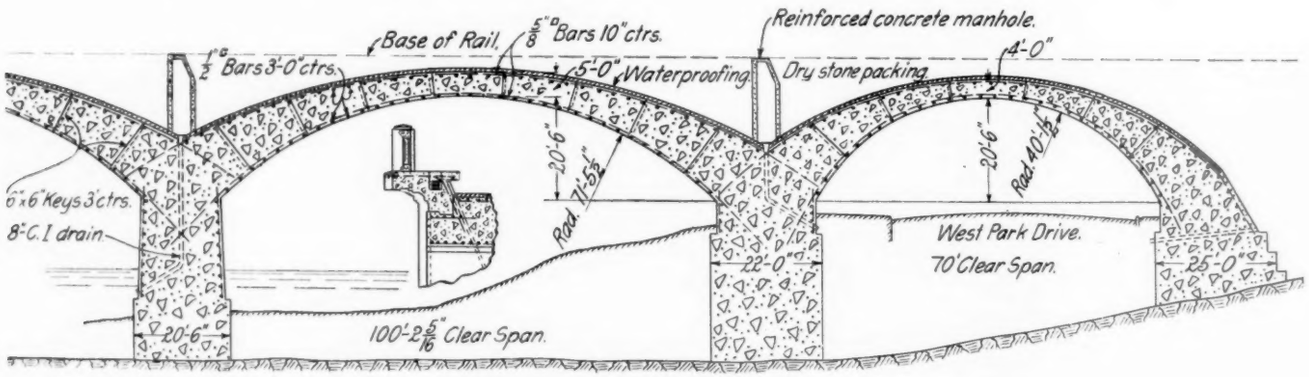


The Bridge Is in Full View from Drives on Either Side of the River

At the termination of the water routes the sections of the canal boats were detached and each run upon a truck. They were then drawn from the water and placed upon the railroad tracks over which they were conveyed to their destination. Freight loaded upon boats in Pittsburgh was often unloaded from the same vessels in the Market street warehouses of Philadelphia.

The above description refers to what was known as the State Works, embracing the western division of the Pennsylvania canal from Pittsburgh to Johnstown, the Portage Railroad with its ten inclined planes over the Allegheny mountains to Hollidaysburg, the Middle division of the Pennsylvania canal, extending from Hollidaysburg to Columbia, and the Philadelphia & Columbia with its inclined plane at Columbia, ascending from the Susquehanna river, thence by locomotives to the head of the inclined plane at Belmont, descending to the Schuylkill river where the road crossed the Columbia bridge and entered the city, via Pennsylvania avenue, the route of the old Union canal to Broad street, where it then turned into Market street.

The main line of the Philadelphia & Reading was opened for traffic in 1838, between the cities of Philadelphia and Reading, and in order to reach the business center of the city of Philadelphia the railroad used a portion of the state road jointly with the state of Pennsylvania, from a point just north of the Columbia bridge and extending to its terminal. On acquiring certain sections of this state road in 1851, the Philadelphia & Reading immediately renewed some portions, strengthened other parts of the Columbia bridge, and adapted it to the use of locomotives instead of horses for hauling trains. The old wooden trusses were finally replaced in 1886, by seven iron through-truss double-track spans each about 150 ft. in length and having a foot walk on the downstream side. These were Pratt trusses with Phœnix columns for compression members, the floor being suspended from the lower chord by U-bolts. The highway crossing of the old wooden bridge having been abandoned, no provision for such traffic was necessary over the iron truss bridge. Several years ago the floor system of this bridge was strengthened and now this structure has been replaced, having become too weak to carry the present traffic safely.



General Details of the Masonry

Traffic Handled

The traffic passing this point consists of all the freight and passenger trains received from and delivered to the Baltimore & Ohio at Philadelphia; the traffic to and from the Central of New Jersey over the New York division of the Philadelphia & Reading, and a large portion of the traffic of the Reading, including that derived from the industries along its main lines in this part of the city of Philadelphia and the Chester branch.

About 80 trains every 24 hours with an approximate average weight of 12,000 tons each are handled over this portion of the main line and in addition to this volume of traffic, numerous shifting movements are made to and from the Belmont yard located at the north end of the bridge. The through-truss bridge was not considered safe to pass the Mallet and Mikado locomotives used on the Reading and in addition the heaviest locomotives permitted to pass over the old truss bridge were not allowed to pass others of the same class while on the structure. All trains were required to reduce speed to 20 miles per hour while crossing.

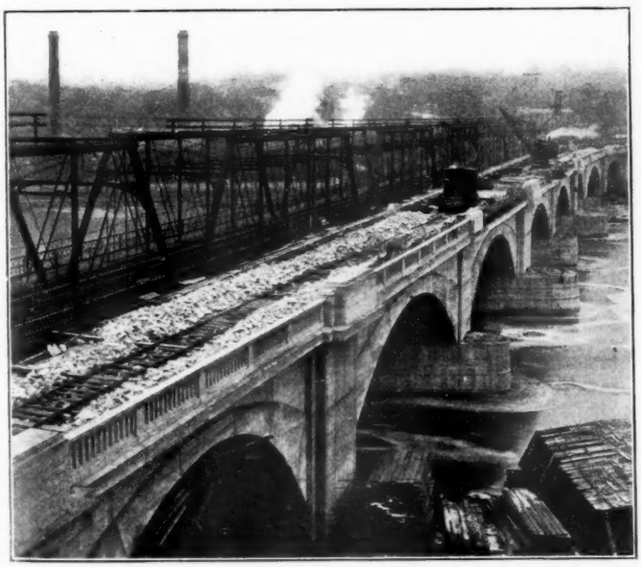
Because of these conditions it was decided to replace the

double-track through-truss bridge with a modern concrete structure located at the side of the truss bridge and far enough up stream to permit of the completion of one-half of the new concrete bridge, which could then be placed in service before removing the old structure. The line of the new bridge was given a slight angle with the old in order to permit of a better alinement at the north end.

Plans Approved by Art Jury

The plans as approved by the Art Jury of the City of Philadelphia and the Water Supply Commission of Pennsylvania and adopted by the railroad called for a four-track concrete arch bridge having eight spans and with a foot walk on the up stream side of the bridge. The eight spans consisted of two arches over the Fairmount Park driveways on each side of the river, each with a 70-ft. clear span, and six arches over the river with clear spans of 100 ft. 2⅝ in.

Preparing for the Construction of the Second Section



The Work on the First Section Nearing Completion

each, all measurements being taken at the spring line and at right angles to the faces of the piers. In order to provide the proper rise for the spans and the required distance from the top of rail to the extrados of the large arches it was necessary to build the tracks at an elevation about 3 ft. higher than that over the old and revise the grades both north and south of the new bridge.

The Design

The design provides for four tracks, 13 ft. center to center, and a foot walk on the up stream side with vitrified clay ducts in each coping for electric light, signal, telephone and telegraph wires. The center lines of the piers have been placed parallel to the direction of the current in the river and make an angle of 65 deg. 41 sec. with the center line of the bridge. The total length of the bridge between the faces of the abutments is 971 ft. 3⅞ in. with a total width under the coping of 57 ft. 6 in.

Each arch is a segment of a true circle with a rise of 20 ft. 6 in., the radii of the large arches being 124 ft. 9 in. and 71 ft. 5½ in. and the smaller 76 ft. 3¾ in. and 40 ft. 1½ in., giving a crown thickness of 5 ft. and 4 ft., respectively. Abutment piers located in the river channel are 28 ft. wide at the spring line. The two piers at the short spans over driveways are 20 ft. wide and the three intermediate piers are 16 ft. The design permits the turning of two large arches and the removal of the steel centering in one operation, the abutment piers providing the stability for the concrete as placed. All the piers have circular ends and are battered ½ in. per ft. on all faces.

Constructing the Masonry Wall to Retain the Stone Packing

Steel reinforcement was used to provide for stresses due to changes of temperatures in the piers, arch rings, spandrel walls, copings and balustrades, and was placed 3 in. back from the face of the concrete. The reinforcement in the neat work of the piers consisted of ½-in. rods spaced 3 ft. vertically and 2 ft. horizontally. In the arch rings, extrados and intrados it consisted of ⅝-in. rods spaced 10 in. center to center parallel with the center line and ½-in. rods spaced 3 ft. parallel to the faces of the piers. In the back of the spandrel wall, ⅝-in. rods were placed on 1-ft. centers. Every alternate rod extends the full height of the spandrel wall and into the arch ring for a distance of 2 ft. This arrangement provided a bond between the arch ring, the spandrel wall and the coping, the long rods also extending into the coping.

For construction purposes the large arch rings were divided into seven sections, and the small into five. The construction joints in the arch rings were carried through the spandrel wall, the coping and the balustrade, after which the top of the joint through the sidewalk and the coping was filled with waterproofing cement to prevent any water

from passing through the joint and down the face of the spandrel wall.

At the piers the construction joint was made where the post and balustrade meet and in order to prevent cracking of the balustrade No. 16 sheet zinc was placed between the joint under the balustrade and the joint between the balustrade and the post so that the balustrade concrete between these two points is free to move with changes in temperature.

Method of Construction

The work of construction was started in July, 1917. Excavation was started at the north abutment. Wood was used for all framework and sheeting. The work was carried on for two river foundations at a time and progressed from the shores toward the center of the river with the greatest depth of foundation below normal water of 23 ft. The most troublesome foundation to excavate was for Pier No. 1, the material removed being large stones, a cubic yard and greater in volume, similar to the material composing the entire area of the bank between the river and the park driveway. The water from the river reached the excavation in such volume that a puddle was necessary along the bank of the river for a distance of 300 ft. to stop the flow. The bottom of this foundation was 20 ft. below normal water level.

Wooden forms were used for all neat work concrete, the lumber being tongued and grooved, surfaced two sides, and 1½ in. in thickness. Wooden centers were used for the

Contrast the Old Original Bridge with the New

70-ft. spans over the driveways, and steel centers for the larger spans, sufficient for turning two arches at a time. The forms for the umbrella sections over the piers were supported in some cases by the steel centering, and in other cases they were built up and supported from the foundation offset.

Floating derricks were used for handling the steel centers, the cofferdam construction, the excavation from the river piers and for the puddling on the outside of the cofferdams. The material for the puddle was dredged from the river channel up and down stream from the bridge site.

Most of the concrete was mixed at the north end of the bridge and transported by narrow gage cars, attached to a cable and operated by a steam hoisting engine at the same end, the movements being controlled by electric bells. The narrow gage track was placed at the side of the truss bridge and supported by the lower chord members. Two 1-yd. side dump cars were attached to the cable, and the concrete chuted from the cars through steel spouts into the forms.

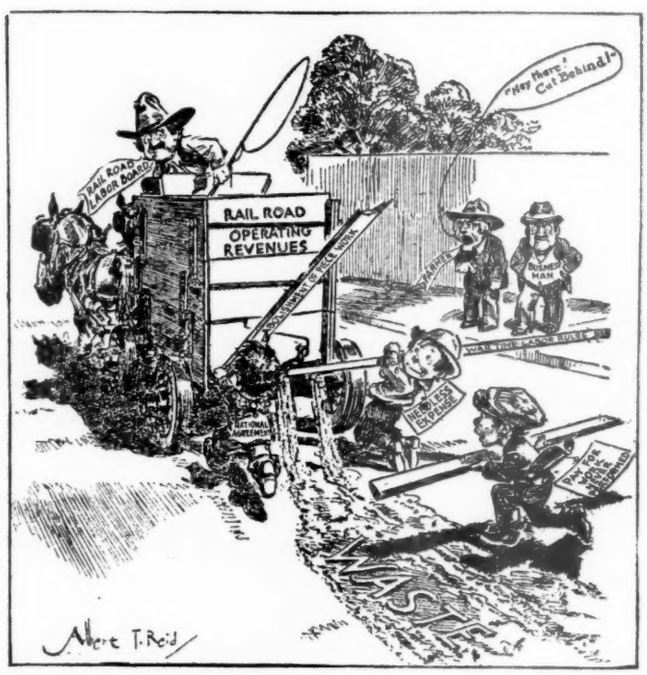
The concrete mixing plant consisted of two 1-yd. mixers operated by steam and fed from an overhead storage bin by gravity. The sand and the crushed gravel were clam-shelled into the bin from storage piles. From the mixers the concrete was elevated and chuted into a hopper over the narrow gage track, that delivered it to the dump cars. All concrete was of a 1-2-4 mix. Embedded stone was used below the spring line in all foundations, piers and abutments.

All backs of arches and spandrel walls were covered with three layers of asphalt-saturated fabric attached to the concrete, fastened together and covered with melted asphalt, making a solid waterproof membrane. This was protected from injury by being covered with a layer of 1-2-4 concrete 2½ in. in thickness, reinforced with No. 12 electrically welded wire cloth of 4-in. by 4-in. mesh. All filling over the arches to the height of sub-grade consisted of one and two man stone packing. Drainage was provided at each pier through an 8-in. cast iron pipe with the discharge end of the pipe placed below the normal water level of the river and a masonry manhole over the mouth of the pipe, with suitable openings in the sides of the manhole to permit the water to reach the pipe. The top of the manhole was brought up to the level of the top of the ties and covered with a cast iron cover in order that the drain pipes and the openings leading the drainage to the manholes could be cleaned.

The outlet of the drains being below the normal water surface will not be visible and it is not likely that they will be stopped up by ice forming in the pipes, except perhaps in extremely cold weather, when an extra thickness of ice forms on the river.

All of the engineering work was done by the company forces of the Philadelphia & Reading under the direction of Samuel T. Wagner, chief engineer; Clark Dillenbeck, assistant chief engineer; Edwin Chamberlain, assistant engineer, and the writer in charge of the forces at work in the field. Before the work could be placed under contract the approval of the Art Jury of Philadelphia, the Fairmount Park Commissioners, the Water Supply Commission of Pennsylvania and the Public Service Commission of Pennsylvania had to be secured. Seeds & Derham, Germantown, Pa., were the contractors for the masonry and grading.

REPRESENTATIVE MANUFACTURERS of Massachusetts and Connecticut will leave on March 12 in a train of 5 Pullman cars, a dining car and a club car for an extended trip in Mexico. The purpose of the excursion is to examine the possibilities of trade extension in that country and make friends with the business men and government officials. The party will return to this country on April 4.



From American Railroads

Selling American Railway Supplies Abroad*

Organization of Specialists, Intelligently Supported, Will Get Results at Reasonable Expense

By David Van Alstyne,
American Locomotive Company

I SAILED IN MAY, 1919, for Capetown and continued for 17 months through South Africa, Rhodesia, Belgian Congo, Portuguese East Africa, British East Africa, India, Federated Malay States, Java, Australia, Philippines, China, Korea and Japan. The principal sources of information upon which I depended for railroad statistics, names and addresses of railroad officials, etc., were the American consuls and the Vacuum Oil Company. Mr. Whaley, vice president of the Vacuum Oil Company, had very kindly supplied me with letters to many of his foreign representatives, but whether I had letters to them or not, I always found them glad to give me any assistance I asked them for.

As for the American consuls general I have found them everywhere not only exceedingly well informed but anxious to be of all the assistance possible. For example, one consul general, not content with what he could give me himself, called up a banker friend and asked him to come to his office and give me more, which he did. Another took me to his club to have me meet people worth knowing; another told me that any time I would write him he would gladly interview or gather information concerning anybody we might have under consideration as agents. Still another, instead of directing me to a man I wished to meet, went with me and introduced us. I cite these incidents to show the character of the men we have representing us in our consular service which I feel we have every reason to be proud of; in fact, the treasurer general of Portuguese East Africa told me that he had served the Portuguese Government in several places throughout the world, and that in his opinion our consular service is the best in the world, though he thought the German service was superior to ours before the war.

I wish also to testify to the value and accuracy of reports, in so far as I have been able to check them, made by our trade commissioners, such as those by Frank Rhea on the railways of Australia, China and Japan.

South African Railways

The railways of the Union of South Africa have 10,000 miles of track, 3 ft. 6 in. gage, generally well constructed with heavy rails and good ballast, but laid according to the natural contour of the ground almost without cuts or fills, going around sharp curves where the hills are too steep, or over them where the grade does not exceed 1 in 30.

A great deal has been and is still being said and written concerning the importance of changing the gage to 4 ft 8½ in. My judgment is that the gage will never be widened because the economy to be effected will not justify the cost. South Africa, like Mexico, is a high plateau, making it necessary to climb long steep grades of 2 per cent to 3 per cent up 4,000 ft. to 6,000 ft. to get up into the country from any port on the coast. Water is scarce and irrigation expensive. Several times as much land is required to raise an equal number of cattle or sheep as in this country. The distances are great and settlement and development of the natural resources must necessarily be slow. Imports or uphill tonnage will be light in comparison with the extent of the country, while exports, comprising the heavier tonnage, such as coal, beef and some grain, is down hill.

What is vastly more needed than change of gage is reduction of curvature and grades, and this is fully recognized by the able and aggressive general manager, Sir Wm. Hoy, who is carrying out such a program as rapidly as he can afford it, besides equipping the road with locomotives and cars of large capacity. Already he is operating several thousand forty-ton coal cars and has begun the application of heavy couplers in place of the hook and link. I apprehend, also, that before very long their difficult braking conditions on mountain grades will result in the displacement of the vacuum brake by the pressure brake, though thus far there appears to be little enthusiasm for such a change.

Also I understand that as a result of a report recently made by an English electrical engineer, it is likely that the mountain grade out of Durban and perhaps the Capetown suburban service may be electrified. I very much doubt the possibility of any such economy as the report claims, but experience seems to indicate that the electrification microbe is of a variety that either we do not get the disease at all or we get a fatal case, rarely a reasonable attack.

Ills of Government Ownership

The South African Railways are government owned and operated and subject to all the ills and evils pertaining thereto. Almost everywhere I have been, the railroads are either partly or wholly controlled by the government, and the results of government operation seem to be about the same everywhere. While the service rendered may be fairly good, it appears to be universally expensive. I have met many able railway men who would rejoice in the opportunity to produce better results, but on account of the difficulty in getting prompt or intelligent action from the government, there is more or less prevalent lack of enthusiasm and a disposition to say "we can't do any better because we are a government proposition." Also I think there is no doubt that government railway labor is more difficult to control because of the meddling of politicians, and this is particularly noticeable in South Africa and Australia.

A former chief commissioner of the Government Railways of New South Wales told me that good results on a government railway depend far more on the ability and force of the chief executive than they do on a privately owned railway, because he accomplishes his good results in spite of his superiors and not because of the support he receives from them.

It is a rare thing to hear a railway official speak in favor of government operation, and about the only good argument I have heard in its favor is that the government can better afford to build and operate at a loss in undeveloped countries than private capitalists. I should also note that labor commissions are often more interested in votes than in efficient service thereby making good discipline difficult to maintain.

American Railway Supplies in British Colonies

South Africa has enjoyed a slow but steady growth in its imports and exports for a good many years and will continue to do so, and there is a relatively small but growing market there for American railway supplies.

Having traveled under the British flag for ten months and made the acquaintance of a large number of British railway men, I am convinced that we exaggerate their prejudice

*An address made before the October meeting of the executive committee of the Railway Business Association.

against American goods, and that a good deal of the prejudice which does exist is justified, due to inferior goods or goods not made as they want them.

Englishmen are conservative and, I think, more than other nations disposed to think that what comes from their own country is necessarily better than that from other countries, but the Englishman is always a gentleman, always receives you cordially and is always ready to listen to what you have to say. When you can deal with such men as the large majority of those I have met, it is only a matter of time when their prejudice will be overcome.

I could cite a good many instances of unexpected courtesies I have received at the hands of British railway men. As instances showing a tendency in our favor, I might cite the case of one chief mechanical engineer who told me he was glad that now that the war is over he will not have to buy any more engines in America or Canada, but volunteered the information that he was using Baldwin engines, purchased during the war, on his hardest passenger run. Another chief mechanical engineer said he always liked to see American builders because he could get so much more worthwhile information from them than from the British. Another told me that he is adopting many American practices and designs.

In another instance, the managing director of one of the largest roads in India told me there was a growing dissatisfaction with their buying through London because their London buyers so frequently sent them what they chose to rather than what was ordered, and that sooner or later they will break away from buying through London and buy direct. Still another case is that of our consul general at Sydney, New South Wales, who told me that in a recent report the British consul at Sydney had advised British manufacturers that they had better make their packages more attractive in appearance if they wished to hold on to the little trade left them by Americans.

Rhodesia and Belgian Congo

Of Rhodesia and Belgian Congo there is not much to be said except that the principal industry in the Congo is copper mining and smelting belonging to British, Belgian and French capitalists, and managed by Americans.

Also a railroad is projected and partly built from Elizabethville to Lobito Bay on the coast of what was German Southwest Africa, to shorten the haul from the Congo to England, the route at present being south to Bulawayo and east to Beira in Portuguese East Africa.

To compete with the Lobito Bay Line the Rhodesian and Beira & Mashonaland railways were considering building a cut-off from Salisbury northwest to a point in the neighborhood of Livingston, which would materially shorten the distance from the Congo to Beira.

The Situation in East Africa

Portuguese East Africa is said by South Africans to offer the greatest opportunities of all the undeveloped countries in the world in agricultural products, timber and minerals.

The Mozambique Chartered Company, J. Gordon Brown, general manager, with office at Beira, is spending a great deal of money in various kinds of development, including building a railroad 150 miles from Beira to Chindio on the Zambesi river to connect with the Nyassa Railway.

Judging from conversations with the governor general at Beira, the treasurer general at Lorenco Marques and others, the Portuguese are very anxious to have Americans invest in Portuguese East Africa to offset the growing influence of and control by the British, and it is common talk that it is only a question of time when Delagoa Bay, the harbor at Lorenco Marques, will come under the control of Great Britain in payment of a loan made to Portugal.

On the other hand, it is stated that due to frequent changes in the Portuguese government, and peculiarities of Portuguese methods, it is difficult for foreigners to do business in Portuguese East Africa, though it is to be noted that it apparently has not seriously retarded the British. Tropical fevers are a serious handicap to white men living in the interior of Portuguese East Africa.

The treasurer general at Lorenco Marques told me that Americans are the most timid people in the world in the matter of extending credits and the chairman of the board of probably the largest importing and exporting concern in South Africa and doing business up the east coast as far as Uganda, told me that in 25 years' experience handling British and American goods he had never represented but one American house which would accept such risks as are commonly accepted by those of other nations.

At Mombassa, British East Africa, I found quite a boom on, many discharged soldiers going into the country to take up land allotted to them by the government, though there were also a good many people coming out of the country, having had enough of it after a short trial.

Also, at Mombassa, I was told by C. D. Gun-Browne, who had charge of the transport service in the German East Africa campaign, that he had several groups of motor cars of various makers, both British and American, and that the Ford group was the most reliable of all and the least expensive in maintenance.

It is also of interest to note that Cecil Rhodes' dream of a "Cape to Cairo route" is a reality now by rail and water, except a few hundred miles, I believe, in Uganda.

India and Its Problems

India has 25,000 miles of railway, one-half of which is 5 ft. 6 in. gage, with the balance chiefly metre gage. The country is quite level in most parts, the railway equipment light, with light trains the rule. Clearance limits are too low and narrow to ever permit fully utilizing the possibilities of a 5-foot 6-inch gage. They use the hook coupler and vacuum brake, but have a committee at work on a heavy automatic coupler. Many of the railway shops are modern and well equipped and they build a lot of their own equipment, at a reasonable cost.

At Jamalpur on the East Indian Railway, they were making the finest looking basic open-hearth castings I have ever seen, and in the iron foundry, barefooted and practically naked molders and helpers were pouring off a 100-ton heat. The Tata Iron and Steel Company at Jamshedpur rolls plates, shapes, bar and rails and employs 20,000 natives. The ownership I understand to be British and Parsee, but the management is American.

One of the most serious problems in India is that of fuel. Their high grade coal in the eastern part of the country is giving out, but there are large deposits in the western part of low grade coal which they seem to have been unable to burn successfully on a grate, and they are, therefore, much interested in finding out about burning it in pulverized or some other form. Fuel oil is said to be too expensive for all the roads, except one or two which can get it direct by water from Persia.

The ratio of natives to white people in India is about 2,000 to one, and the bulk of railway business is native third-class travel, which is very cheap and profitable. Not much attention is given to keeping a check on first-class passengers and of about 800 rupees worth of tickets I bought, I still have three-quarters unpunched and not even looked at.

Federated Malay States and Java

The Federated Malay States Railway, metre gage, has excellent roadbed and equipment, and runs some very fine passenger trains at uncomfortably high speed for the narrow gage. Kualalumpur, the railway headquarters, 250 miles north of Singapore, has government and railway buildings which would be a credit to any city. While I was at

Kualalumpur, 2,000 native railway shop employees returned to work after a two weeks' strike for more money.

Everywhere I have been I have observed that no matter how otherwise primitive and unsophisticated the natives may be, they are able to organize sufficiently to make demands and call strikes. In Johannesburg the native gold miners sent a committee to meet the employers and demand higher wages and better conditions. At Bulawayo I witnessed a conference between 300 striking Matabeles sitting in a circle on the ground and the railway general manager standing in the centre. Many thousand Indian coolies were on strike in the Bombay jute mills, and a little later the Tata Iron and Steel Company had a prolonged strike almost forcing them to close the plant. In Hongkong the native electricians' union struck and stopped the tram cars and electric lighting. In Shanghai the dock laborers struck, and I learned that numerous unions were in process of being organized. In Japan organized labor is becoming very strong, and wages have increased a higher percentage since before the war than they have here, though, of course, the difference between Japanese wages and ours is greater than ever.

Everywhere that I have been able to make observations, output per man has been much below ours, whether from white or native labor, and ranging, I should judge, from one-half to one-fifth. Some of the difference is, of course, attributable to our better equipment. Rarely have I been able to find railway shops which had a good cost system, and railway statistics as we have them are almost unheard of. The principal exception is the Chinese Government, which issues annually an excellent report, devised by Americans.

Java has an excellent railway, 3 ft. 6 in. gage, running the length of the island—500 miles. The government is said to have a large program for railroad construction and other development in Java, Sumatra and Dutch Borneo. The Java Dutch seem to prefer to do business with Americans and are anxious to have American capital invested in the Dutch East Indies.

I was told that a great deal of American capital is being invested in rubber plantations in Sumatra and the Federated Malay States.

It was painful to see locomotives fired with teak and other hard woods which I suppose would be worth almost a dollar a foot here.

Australia

Australia has a few more square miles than the United States and five million population. Three-fourths of the population live in six cities. It is a white man's country, and the government makes it almost impossible for any cheap Oriental labor to come in. The state governments are all more or less controlled by the labor party, and their policy seems to be to meddle with all kinds of business. Whenever the newspapers or a group of agitators can make a good case against some branch of private business, the government takes it over and makes it worse. Almost all the railway and tramway mileage is government owned and controlled.

There is little immigration and very little outside capital coming into the country. Business men claim that the governments are killing all enterprise and development, and many of them predict a revolution. The ratio of government employees to total population is said to be one to five, the highest in the world. Chinese labor, which can stand the intense heat, is much needed in Queensland on the sugar estates. The Queensland government forbids it, and the sugar industry is only half developed.

The railways skirt the coast from Fremantle on the west coast to north of Brisbane in Queensland on the east coast, there being very little mileage in the interior; in going from Fremantle to Brisbane, 3,500 miles, the gage changes five times. Three gages are in use—3 ft. 6 in.; 4 ft. 8½ in. and 5 ft. 3 in. According to three chief commissioners whom I met, the cost of keeping idle equipment and labor for transferring goods and passengers at points where the gages change is tremendous.

All the railways have water competition and since the fertile country is along the coast and the interior is a desert, or subject to droughts, there is not likely to be very rapid railway extension into the interior.

In the matter of unifying the gage there is a good deal of jealousy between the states, but the general opinion seems to be that in the course of time they will all adopt 4 ft. 8½ in., which is the federal territory standard.

The good coal being near the southeast coast, the cost of fuel is a serious matter in south and west Australia, and since there are large deposits of low grade coal in south Australia, they are much interested in finding some way to use it, either by pulverizing or through some other process.

At Sydney I visited the Clyde Engineering Works, which, has an order from the New South Wales Government Railways for 300 locomotives. The government railways of New South Wales and Victoria have fine shops and build much of their own equipment. At Newcastle there is a large steel plant locally owned but having an American manager.

In my travels I have met many Americans in business and several managing large industrial plants, but nowhere any American railroad men, except two in China, managing roads still on paper, and one in Manila. Since I left Australia, I have read in the *Railway Age* that an American named Clapp has gone out to Australia to be chief commissioner of the Victorian Government Railways.

The policy of the Australian governments is to patronize home industries as far as possible, and railways are not permitted to buy outside the country what can be had in Australia.

The Philippines

Manila has 600 miles of 3 ft. 6 in. railway and a program for building 300 miles more. The uncertainty as to how soon the Philipinos will be given their independence retards development, and I heard Americans complain that American capital is being invested everywhere in the Orient except in the Philippines.

China

China has 6,000 miles of railway, built and operated under many different managements which have three things in common, namely, a 4 ft. 8½ in. gage, an American vertical plane coupler and a uniform height of coupler, or nearly so.

All the railway mileage is in the eastern half of the country and undoubtedly the great extent of the country, the population of 400,000,000, and tremendous agricultural resources will call for rapid extension of the railways, whenever they can establish a stable government and put a stop to their endless civil wars. Gradually the government is taking over the control of the railways, but foreigners, especially the British, still control a considerable per cent of the mileage, and hence the buying also.

Practical railway executive talent is very scarce among the Chinese, and one of the most prominent Chinese engineers told me he hoped the foreigners would continue to manage those roads which they still manage because there are at present so few Chinese capable of doing it efficiently. Having had ample opportunity to verify this opinion, has led me to wish that Chinese students, who come to this country for a college education and expect to go into railway service in China, might first get some actual railway training which would be much appreciated by them and would carry a knowledge of American methods and equipment into China. Recently the Chinese-American Engineers' Society was organized in Peking, and I had the honor of becoming a member of it.

For the past year the Ministry of Communications has had

a Commission of Technical Advisers from several nations at work standardizing methods and equipment on the government railways. The two principal advisers are an Englishman, T. R. Johnson, on maintenance of way and structures, and F. H. Clark, formerly of the Baltimore & Ohio on mechanical matters.

Japan

In Shantung, Manchuria, Korea, Formosa and Japan the railway service is all under the control and management of the Japanese government and is generally very good.

The Shantung, South Manchurian, Formosan and Korean railways buy, I presume, chiefly in the United States, but it is the policy of the Imperial Government Railways to get as much finished product as possible within the Empire.

Railway shops, locomotive works and plants exhibit exceptional energy and enterprise, but their productive efficiency, I should judge, is considerably below ours. Their production of steel is still small compared with their consumption, but with their extensive control of iron ore, coal and blast furnaces in China, they will, before long, supply practically all their requirements in steel, no doubt.

Japanese trade has suffered a very severe setback since the war, chiefly, I understand, for two reasons; one, the Chinese boycott and the other the almost universal unpopularity of the Japanese and Japanese goods. While the boycott has been more or less intermittent, sometimes feeble and other times very intense, it has on the whole been quite effective and very expensive to the Japanese. A representative of a large Japanese importing and exporting house told me the boycott had cost his firm millions of dollars, and in some places Japanese firms have been driven out of business.

The unpopularity of the Japanese seems to extend all over the Orient, and to all nationalities, being at its worst, I should say, among the British, but I am disposed to think that a great deal of it is commercial jealousy more than anything else. My personal experience with the Japanese has been exceedingly agreeable.

Japanese goods were condemned in almost every country I was in. In South Africa the complaint was that Japanese goods are never up to sample and that they will buy no more at any price. In India almost the entire freight car equipment of the country was running without power brakes because of the very inferior quality of the rubber hose, gaskets and rings they were obliged to take from Japan during the war, and in Australia there is a law excluding goods not up to the standard of Australian goods, which I was told was chiefly intended to exclude Japanese goods. It is interesting to note that the Japanese have in Korea exactly the same problem of cheap labor driving out the more expensive as we have in California.

In the railway shops in Dairen, Manchuria, and Seoul, Korea, only 25 per cent of the labor is Japanese because it costs considerably more than the native Chinese and Korean labor and is not worth the difference for most of the work.

How to Create a Market for American Railway Supplies

In all the countries I have visited, which comprise nearly all the civilized world except Europe and South America, it is to be observed that the volume of railway supply business is small in comparison with the enormous territory to be covered and that in all but China, Java and the Philippines there is more or less prejudice against American goods. Even in China there is prejudice against us on the part of the foreigners, to the extent that each nationality naturally prefers to buy of its own country.

On the other hand, all of these countries are still greatly undeveloped, but are growing, some rapidly, others slowly, and I believe that we have decided advantages over most other producing countries in that we have most highly developed the art of railroading, have the greatest productive efficiency, and superior methods and enterprise in introducing our goods. Having in mind, therefore, that our first problem is to create a market and considering all the conditions, I have been thoroughly impressed with the idea that, if practicable, American railway supply manufacturers should combine and handle their business through one or more large organizations which could afford to employ the highest class of talent.

The specialist who can convince the railway man that we offer the latest and best, who can talk the railway man's language and who can assist him in solving his difficulties by showing him how they have been solved in this country, it seems to me, is the man who will make friends for American railway equipment in countries where the best may be unknown and where there is prejudice against things foreign or different from what they are accustomed to. Steadily increasing wages and difficulty in handling labor would seem to me to help create a demand for the most efficient in railway equipment.

Such men, I should think, would come from the ranks of the first-class railway men. Being railway men they would be able to specialize in many classes of railway equipment sufficiently well for the purpose. Such men would provide the service necessary to keep customers satisfied after the goods are sold, and service is as much needed abroad as in this country.

In most countries outside the United States when you have won over the mechanical man, the job is practically done because he generally gets what he wants.

The small volume of business and the time required to enlarge it would not justify any one manufacturer in sending out the class of representatives I have in mind, but it seems to me that a group of manufacturers could well afford it and safely expect excellent results eventually.

I have heard a number of complaints from American representatives in foreign countries to the effect that we do not understand foreign trade; that we do not take proper care of it; that we are very anxious to get it when domestic business is bad but neglect it and lose all the ground previously gained, when domestic business is good.

One man told me that the intermittently hot and cold way his principals had of treating their foreign business was very discouraging; another that he expected to lose his mind trying to get his people to understand what was required in his territory; a third that a general officer of his company had not been out to study conditions in his territory for twelve years; and a fourth that when a man crosses the ocean to represent an American house, he might as well go to the moon in so far as any assistance from headquarters is concerned.

The general officer of one of our largest corporations, whom I met in Japan, said he had gone out to study conditions in the Orient, and that now his big problem was how to make the people at home understand them, which he felt would be a very difficult undertaking.

Other people are out after business also, but I doubt if any of them know as well how to get it as we do, with the possible exception of the Germans, whom I found after business in three places—Portuguese East Africa, Java and China.

Observation of the workings of the big import and export houses has not impressed me that they are the best adapted to exploit such highly technical goods as railway equipment, especially where such equipment has to be introduced into a new and prejudiced field. They have too great a variety of lines and too little specialized talent.

The problem is chiefly to create a market and having created it, to hold it. I have a firm conviction that an organization of specialists, intelligently supported would get results at reasonable expense.

An Optimistic View of the Railway Situation*

Favorable Public Opinion, Closer Co-operation and Wise Legislation Make Outlook Promising

By Julius H. Parmelee
Director, Bureau of Railway Economics

IN DISCUSSING THE railway situation from an optimistic point of view, I am not unmindful of the depressing traffic and operating condition in which the railways find themselves at the present time. We are in the midst of a traffic slump. Revenues have declined, net earnings have been far from adequate since the rates were increased, and the labor situation is charged with dynamite. Let us, however, remove ourselves for a few minutes from present conditions and take a look into the future, which has in it, to my mind, many elements of optimism and of encouragement.

To get the perspective for such a forward look we must go back over railway history for 20 years. The period between 1900 and 1910 was of the greatest significance for the American railways. For one thing, the Interstate Commerce Commission during the decade secured what it had been demanding for years, namely, authority over interstate freight and passenger rates, with power to suspend rates, to initiate investigations with or without complaint, and to prescribe penalties for violations of its rate decisions. Total railway mileage grew about 25 per cent during the decade, whereas business grew at a much faster rate. Freight traffic increased 80 per cent, while the passenger traffic more than doubled. The general level of prices increased about 2½ per cent a year, while railway wages rose about 2 per cent annually. Although the operating ratio increased during the decade, the rate of return on investment increased from about 4½ per cent to about 5½ per cent. In other words, although the railways experienced a period of rising prices and wages, they kept ahead of the increase in cost of operation by greatly increasing their business and by introducing efficient methods that more than offset the increase in expenses. The trend was distinctly favorable to the railways.

Was there any change in this trend after the commission secured control over railway rates in 1910? The answer may be made in two ways. In the first place, railway growth virtually ceased, so far as new construction was concerned. Prices increased 25 per cent a year, or 10 times as fast as before, while wages rose about 8 per cent a year, so that by the end of 1917 the average annual earnings of railway employees were 64 per cent higher than they were in 1910, and the operating ratio had increased from 66 to more than 70 per cent. Average receipts per ton-mile, which had increased between 1900 and 1910, fell to a lower level in 1917 than in 1900. The rate of return on investment, which is the final basis for judging railroad prosperity, declined to about 5⅓ per cent. Taking the eight years from 1910 to 1917, inclusive, and breaking them up into two four-year periods, we find that the rate of return on investment was less during the second than during the first four-year period, despite the fact that the second four years contained the year 1916, which the heavy war traffic made one of the banner years in railway history.

In the second place, to reach an answer we may summarize the rate decisions of the Interstate Commerce Commission during the eight years from 1910 to 1917. Beginning with the two general rate petitions filed by the Eastern and Western carriers in 1910, both of which were denied by the commission, and extending through the Five Per Cent case of 1913-1914, the Western case of 1915, and the Fifteen Per Cent case of 1917, we find that the commission in every case either denied the petitions of the carriers or granted them only in part. There were long delays between the time petitions were filed and the date they were finally decided, and it cost the railways millions of dollars merely to find out whether or not the commission would grant them the desired increases.

I make no criticism of the Interstate Commerce Commission in this connection. Economic tendencies, such as the rapid rise in prices and wages, were running against the railways in this period and the commission was itself the victim of certain economic and political forces which it would indeed have taken a courageous body of men to withstand. Nor do I claim even that the commission was responsible for the unfortunate financial position into which the railways were slowly but surely drifting. Whatever the cause, the railways unquestionably found their earnings on the decline and their credit steadily on the wane. The situation during this period, while not critical, certainly carried the signs of impending crisis, were not something done to relieve the situation.

When President Taft approved the Mann-Elkins Act in 1910, which was the final step in the series of acts conferring on the commission the power to regulate rates, it was believed that the problem of railway credit was solved, at last. As a matter of fact, it was not so near solution at the close of 1917 as at the beginning of 1910.

That the problem was fraught with danger was recognized by many students of the railway problem, and no less by the railway executives themselves. In September, 1914, a committee of railway executives waited upon President Wilson and laid before him the facts with respect to the declining credit of the carriers as related to their duty to furnish efficient service to the American public. As a result of this conference, the President publicly announced his willingness to "call the attention of the country to the imperative need that railway credit be sustained and the railroads helped in every possible way, whether by private co-operative effort or by the action, wherever feasible, of government agency." He continued: "I am glad to do so, because I think the need very real."

Furthermore, the President's annual message to Congress in December, 1915, suggested the creation of a commission of inquiry, "to ascertain, by a thorough canvass of the whole question whether our laws, as at present framed and administered are as serviceable as they might be in the solution of the (railway) problem." In a later paragraph the President called the effort to solve the railway problem a step toward "national efficiency and security." "In this (he added) we are not partisans, but heralds and prophets of a new age."

In response to this recommendation Congress, in 1916, appointed a Joint Committee to make a comprehensive study of the transportation question. Partly because of the death of its chairman, Senator Newlands, and partly because of the inception of government control of the railways, no formal report was ever filed by the committee.

This very brief survey of the trend of railway affairs dur-

*Address before the Washington, D. C., Traffic Club on February 5, 1921.

ing the periods prior to and succeeding 1910 indicates how the trend had changed, from one that was inclined upwards to one that was discernibly inclined in the opposite direction. The entry of the United States into the war, followed by government operation of the railways a few months later, represented a break in the continuity of the trend, and we may therefore skip the three years that elapsed between December, 1917, and September, 1920, and consider the prospects for the future. In doing so, let us place ourselves, to quote again from the President, "not in the attitude of partisans, but of heralds and prophets of a new age." That we have entered a new era in transportation no one will deny, however differently we may view the benefits or drawbacks of the new order.

In the first place, the railways have survived the period of government operation and have emerged stronger in public opinion than ever before. There is no question in my mind that for the present, at least, the American people have had their fill of the government in industry, and that the railways have a clear field for the development of a strong, well organized industry. This gain is one of the most important results of our entry into the great war.

In the second place, railway managements have during the past four years been learning the value of co-operation, which will mean much for operating efficiency in the future. Organization of the Railroads' War Board in 1917 as a voluntary method of forwarding the national war program was an important step. On the theory that for the time being war was the nation's business, the railway companies submerged their individual interests and unified their operations into one continental system. The beneficial effect of that forward step in railway co-operation was so great that it is difficult even to comprehend it. The period of federal control also furnished an object lesson of the value of co-operation, so that today we have the spectacle of a fine give-as-well-as-take spirit among the railway companies, without losing any of the benefits of a healthy rivalry. The resulting advantages are many and patent, affecting the railways themselves, their employees, efficiency of operation, and the attitude of the public. No one who has been an observant spectator of railway affairs for the past few years can fail to have been impressed with the growth of this fine spirit of co-operation.

In the third place, the railway managements are more sensitive to public opinion than ever before. In all their recent appearances before public bodies, the railroad representatives have been careful to emphasize their appreciation of the public's stake in transportation efficiency, and to place the public interest above that even of the railway owner and employee. I believe them to have taken this position in all sincerity, and not because they consider it the better part of expediency. Contrast this with the different attitude of many railway executives in the past, and one can see how far we have traveled toward a clearer understanding of the railway problem by the railways themselves. With a motto of "adequate and efficient transportation service the first consideration," the future of railway operations cannot but be brighter than the record of the past ten years.

In the fourth place, the railways and their employees are on terms of a better understanding of each other's point of view than for some time, perhaps better than ever before. I say this with full appreciation of the present strained situation in the railway labor world, from which I feel that both sides will emerge with a more wholesome respect for each other. Railway labor has learned several valuable lessons during the past year. The employees discovered, for example, that the public at large considers its own interests more vital that that of any one class. They are coming to realize that liquidation of industry cannot come unless they make their contribution in the shape of greater efficiency and loyalty, forego special privileges they have acquired, and even, if necessary, accept a lower wage level to accord with lowered living costs. But the lesson has not all been labor's to learn. The managements see labor's point of view more clearly than has sometimes been the case, and are giving the interests of labor, as well as that of the general public, the most earnest consideration. This has taken various forms, such as a greater share in questions of management, as on the Pennsylvania, but whatever the form, I believe a better day is here with respect to the so-called "capital and labor" problem on the railways. What that will mean for the future efficiency and prosperity of the railways is clear without the necessity of elaboration.

Last, but by no means least, a new era in transportation was ushered in by the passage of the Transportation Act, which has now been effective for nearly a year. You are all familiar with the details of that act, and I need refer only briefly to the four principal provisions of the act which in my opinion justify optimism for the future. For the first time in history the investor in railway securities, without whose co-operation not a wheel would be turning on the railways today, has his investment safeguarded through the assurance of a definite rate of return on his investment. Second, operating efficiency is assured through the provisions giving the commission power to require honest, efficient and economical management, also the power to unify certain operations in times of emergency. Third, the interests of labor are assured through the provisions of orderly procedure in the case of wage and working disputes. Fourth, greater efficiency and economy are foreshadowed in the provisions of the act relating to consolidation of the many railway properties into a smaller number of strong, well organized systems. The Transportation Act is far from a perfect, or even a satisfactory, legal document; in some respects it has not yet commenced to function, while in other respects it is functioning only partially or at least faultily; it will doubtless be amended again and again; but as a whole it points the way to a much brighter future for the railways than they could foresee five years ago.

In spite of many serious problems still remaining to be solved, and many obstacles to be surmounted, I trust that this discussion of the broader aspects of the problem will convince you, as it has already convinced me, that the future of the railways is brighter today—taking a long look ahead—than it has been at any time during the past 10 years.

Photo by International

The Railway Line Which Intersects the Great Chinese Wall

Shippers' Views on Increased Loading of Cars

Commercial Traffic Men Offer Suggestions to This End for the Consideration of Railway Officers

IN THE *Railway Age* for January 28, five railway men who contributed to the contest on car loading presented their views on methods that could be instituted for improvement. Much of the matter presented concerned the part which the shipper must play in making a success of this project. With a view to the presentation of the other side of this important problem, we publish in this issue a series of papers contributed to the contest by representatives of the shippers, most of whom point out in no uncertain terms the changes of practice which could be well instituted by railways as a means of encouraging the shippers to do their part. In a measure these suggestions concern means of expediting the movement of traffic so that the shipper can see that his efforts are being appreciated. Other matters brought up concern changes in traffic arrangements, rates, etc., which would make it of pecuniary advantage to the shipper to load the cars to capacity.

Strengthen the Right Arm of the Superintendent

By E. H. Shaughnessy
American Petroleum Institute, New York City

The gap between the actual car loading and the possible car loading is due, generally speaking, to underlying fundamentals beyond the control of those actually engaged in putting the freight into the car. Ignoring the question of merchandise car loading at freight houses, which is always troublesome and purely a matter for decision as to whether it is better to load heavy and pay many claims, or light and not pay so many claims, it seems that the reasons which cause the loading to stop short are about as follows:

(1) The customer's order is filled, (2) the car is full, (3) there has been a man failure.

Discussing these items inversely; man failure, either on the part of the railway or shipper, may be expressed as carelessness, ignorance or disobedience on the part of employees, individually or jointly, as the case may be. These things have considerable to do with inefficient carloading but, in the writer's opinion, not nearly so much as is generally supposed. Ordinarily, men loading a car will fill it unless some outside influence stops them. The only effective remedy for man failure on these counts is sufficient, competent, railway supervision. The way to get this sort of supervision is to strengthen the good right arm of the division superintendent. By this is meant closing the gap between the station agent and the train master on a fifty-fifty basis by:

(a) Making the station agent a real man of affairs with increased authority and responsibility,
(b) increasing the trains masters' organization, if necessary,
(c) eliminating the "inspectors" of this and that, who only muddy the water.

There is here, a most fertile field for constructive thought and endeavor. The need seems to exist right now for efficient railway officers of the new school. Recruits of the right sort and in sufficient quantities to fill vacancies are apparently not in sight. What better sort of recruitment for all around men is there than through the station forces? The writer feels constrained to say that the agents will quickly close up their 50 per cent of the gap if only given the opportunity to break away from the mass of non-essential routine stuff they are obliged to struggle with daily and they will prevent "man failure" as no one else can.

As for the train masters' organization, it should be extensive enough to keep the entire divisional operation under personal daily observation. The train masters should be all-around men, not specialists, and responsible for practically everything that happens. The management should be eminently fair in providing enough of them so that the necessity for "touching the high spots" would be entirely done away with.

There should be no inspectors, so-called, working under general officers or department heads. They simply muddy the water. The inspecting should be done by the general officers or department heads personally, who could speak with authority on the ground, instead of sending out the betwixt and between inspector to observe and report. It stands to reason that the reports will be one-sided, therefore unfair, and, generally speaking, a source of friction in what ought to be a smooth-running machine.

Under the second item affecting light loading, "The Car Is Full," is found a very frequent cause for underloaded cars arising from one of two contingencies; (a) character of the freight, (b) character of the car. For several years past, particularly under the urge of war necessity, rapid strides have been made by shippers in condensing bulky articles so as to increase the loading per car. The incentive in reducing freight charges is taking care of this feature almost satisfactorily. The isolated cases where cars are wasted through chronic carelessness in loading bulky articles properly comes under the head of sufficient, competent supervision as covered in the first item. It seems proper to say that there ought to be a uniform method devised for rating cars so that when they are completely filled with scientifically condensed bulky freight, full tonnage will be credited to the loading station, otherwise the records are not fair in comparison.

Coming to the character of the car we find a situation that brings down the figures materially. Some time in the future, it ought to be the near future, it is to be hoped that those who really run the railroads will get together and force the issue with the car designers so that real standardization of equipment will be a fact and not a fancy.

Recognizing the fact that the oddly (freakishly is too harsh a word) designed car had a mission to fulfill when it came out of the works, the thing to do is to hitch the car to its mission. In other words, if the railroads really want to increase car loading the thing to do, right away, is to get the cars back on the home roads where their eccentricities can be utilized. The way has been provided through the car service division, of the American Railway Association, and it is up to the superintendents of transportation to carry out enthusiastically and effectively the policies as outlined by that division. However, the superintendents of transportation are helpless unless there is sufficient competent divisional supervision to put these policies into effect on the ground. Unless the station agent and the train master are on top of the work and know beforehand that cars are going to be placed for loading in an intelligent manner with the idea of a full load, and keeping the cars in the home service as far as it is humanly possible to do so, everything else is wasted and idle effort.

The first reason given for reducing the average load of cars, namely, "The Customer's Order Is Filled," seems to the writer to be of first magnitude in effect. Surely those who

have come to grips with the underloaded car at close range have found this obstacle a most frequent one and the hardest to overcome. The answer is for customers to "Buy a Carload." There is nothing new in this idea and considerable progress has been made in spasmodic campaigns on the propaganda order, but the surface has only been scratched. It seems correct to say that the bulk of underloaded cars in this category are for the merchant in the small town, or the small merchant in the big town. These two classes, dealing direct with the consumer, receive a very great part of freight handled by the railroads so that their policy becomes the railroad policy, whether or no, and the policy of most merchants coming under these heads is to order goods in limited quantities without regard to car capacity, but with great regard to their own limited warehouse capacity. It is only by the closest, unselfish co-operation between railroad organizations, for the common good, that the "Buy a Carload" idea will become universal.

How is this to be brought about? Sufficient, competent divisional supervision—there is no other way. Of course statistics should be prepared showing the car loading in cars delivered to the consignees as well as those loaded by shippers, so that division officers may be accurately guided in their efforts, but statistics, circulars, moving picture exhibits, what you will, are of very little avail unless the station agent and the train master have the objective constantly in mind and strive for it persistently without any letting down in their effort whatsoever.

What the Roads Could Do to Encourage the Shipper

By C. T. Bradford
Manager Traffic Department, International Harvester Company, Chicago

It should be assumed at the start that under favorable conditions the majority of shippers would utilize cars as nearly as possible to their maximum capacity. This is being done today to a liberal extent, but the carriers themselves could contribute a good deal to this end by adopting certain measures such as the following:

Recondition equipment so that it will stand this heavy loading. Our attention has been called frequently to the shifting of loads in cars which were in no condition to withstand the impact and which should have been in proper repair before such loads were put into them.

Carriers should make a study of the manner in which the switching is done. A great many damage claims undoubtedly now arise as result of rough or careless switching in hump yards or elsewhere, and this damage is naturally greater where goods are piled high in the car to reach the maximum car loading capacity.

It does not seem that the present practice of charging shippers for dunnage furnished by them is one which would encourage heavier loading. The use of dunnage is of course to protect the goods in the car and permit heavier loading, and a transportation charge on this dunnage, based on the freight rate applying on the goods which the car contains, tends to discourage rather than encourage the use of dunnage and consequent heavier loading.

There are certain kinds of freight such as import freight which carriers load themselves. It is suggested that carriers study carefully the loading of import freight to see if they themselves are not guilty of light loading.

It also must be remembered that the loading of a car is necessarily held down to some extent and in some cases by the commercial needs of the country dealer or consumer as to the quantity of goods which he can take care of at one time. This loading could be improved by the extension of stopover arrangements, whereby a car may be stopped in transit to unload partially and sent on to an intermediate point to finish unloading, the through rate to apply from original point of shipment to final destination, plus a stopover charge at the intermediate unloading point. Such arrangements are now in effect in the west and central freight association territory to some extent, but not in the southern or eastern trunk line territory. An extension of this privilege would enable more combination loads to be made to consignees in adjoining towns and thus bring up the average car loading.

It would be inconsistent for carriers to suggest increased demurrage rates concurrently with the heavier loading of cars. It is obvious that the length of time required for unloading and loading is in direct ratio to the weight of the carload, and an increase in demurrage rates would not seem to be an encouragement to heavier loading but rather the reverse.

Traffic Problems Involved

By J. F. Atwater
Manager Transportation, American Hardware Corporation, New Britain, Conn.

While maximum loading of cars helps diminish the general congestion on the railroads, especially at terminals and points of interchange, it does have its disadvantages unless due care is used. It is not advisable to load cars 10 per cent over their maximum carrying capacity, for if cars are overloaded, it has been the writer's experience from observations that such cars are frequently crippled in transit to such an extent that it requires the carrier to transfer the lading. This seriously interrupts traffic and causes an additional expense to the carrier which could have been avoided if the proper care had been taken in loading the car at its initial point of shipment. Too heavy loading contributes to the pulling out of a great many draw bars. If proper judgment was used, maximum loading would be a great benefit to the carrier and to the shipper.

Bulk material, such as forest products, grain, and iron and steel manufactured products, should not be loaded above the marked carrying capacity of the car. Such articles as manufactured hardware, which are packed in cases, should not be loaded too heavily, regardless of how substantial the case may be, because almost invariably the lower tier of packages will be crushed, entailing claims for the carriers to adjust.

The carriers themselves can, if they would, still extend the maximum loading of commodities. Consolidated Classification No. 1 permits the mixing of various articles under what is known as Rule 10, but throughout the Classification there are hundreds of items classified with only a l.c.l. rating and under the conditions of Rule 10 a shipper cannot take the benefit of consolidation unless there is a c.l. rating on his commodity. The Classification committee in promulgating the Consolidated Classification, in establishing c.l. ratings, would only consider items that moved in carload lots. This, in my opinion, is a mistake. Regardless of whether there is a c.l. movement or not, c.l. ratings should be provided for all articles where there is a possibility of prevailing upon the shipper to forward in carload lots. In loading a car to its maximum capacity, it involves a large expense to the shipper, for it requires extra labor in stacking up packages and cases in the car. Therefore, no shipper is going to this expense when there is no carload rating and no benefits to be derived therefrom.

Articles without a carload rating are delivered through the local freight houses and on account of the various articles loaded at a local station into a car, it is not advisable to

load a car to its cubic capacity, due to the fact that there are too many light and fragile articles which are sure to be damaged from overloading if the maximum capacity is pursued.

Great advantage can be derived in the use of equipment by loading of two carload consignments in one car, when shipments are destined to points in the same direction. Such consignments are handled under two bills of lading. It is possible, in some instances, to load two carload shipments destined to two individuals located in the same town in the same car and the shipper should take advantage of this opportunity. Then, again, a large shipper having orders from two individuals in the same direction which would warrant loading to the carload minimum should arrange to load the material in the same car under two bills of lading, notifying the local agent to this effect and arrange with the local agent to consign the car to an intermediate point for the first consignee to unload his goods and, after unloading is completed, forward the car to its ultimate destination. In such cases both waybills follow the car, and the agent at the first stopping place retains the waybill until the first consignee has completed his unloading and then forwards the car to its ultimate destination on the original waybill. For some unknown reason, this practice has not been followed to any great extent, but it should be encouraged by the carrier.

Carriers should not undertake to increase the minimum weights in their classifications and tariffs but should take other methods to encourage heavy loading. There are a great many instances where cars cannot be loaded to their marked capacity, due to the fact that the consignee is not in position to buy above a reasonable classification minimum weight. Rather than increase the minimum weights, carriers should encourage the loading of two carload consignments in one car.

The Basic Defects and Their Correction

By C. W. Hoisington
San Francisco, California

By loading to the capacity of a car we will gain three distinctive points: (1) We will increase the earning power of the car, (2) effect a reduction in car miles and (3) effect a reduction in the number of cars to be handled.

It is a well known and proven fact that enlightenment and education are the prime factors in gaining a desired point both with the public and our employees, and in order that we may prescribe for the treatment of the prime causes responsible for the failure to load to capacity we will classify them as follows:

(1) About 20 per cent of the nation's freight in commodities that cannot be loaded to car capacity.

(2) Reduced capacity loading due to making local merchandise set outs.

(3) Use of 100,000-lb. capacity cars in merchandise and light commodity service.

(4) Lack of information to shippers on loading and ordering equipment.

(5) Lack of efficiency in the office of the division car distributor.

(6) Lack of efficiency in terminals, in placing cars.

(7) Lack of efficiency in the local agent's office.

A review of the seven retarding influences bring forth some pertinent conclusions:

(1) In localities where fruit, stock, merchandise, cotton, wool, wooden ware, furniture, autos, hay and mill work are in abundance, it behooves operating officers in these localities to make a very close study to avoid the loading of high capacity cars as far as practical.

(2) In making local merchandise set out cars, unless to a point where box cars are in demand, a close study should be made of the conditions.

(3) The practice of retaining 100,000-lb. capacity cars in local merchandise service, which should be watched, as these cars have a larger earning capacity in other classes of service.

(4) An endeavor should be made to interest commercial bodies, industries, shippers large and small on the importance of loading to capacity and ordering such equipment as will suit their needs.

(5) The local division car distributor should be thoroughly familiar with the various commodities loading in his territory and keep a close surveillance on all orders placed for equipment.

(6) The local agent can accomplish wonders by acquainting himself thoroughly with the needs of all the patrons of his station and tributary blind sidings. To stimulate interest a prize is an ideal method for showing the leading agent on loading to capacity that his efforts are noted.

(7) To improve the efficiency of yards in placing cars for loading make a systematic study of requirements of empty equipment and use just such as is suited.

Offer the Shipper a Real Inducement

By C. E. Childe
Manager, Omaha Chamber of Commerce, Omaha, Neb.

The best, fairest and most effective way to make a shipper load cars heavily is to adjust rates so that it is profitable for him to load heavily. The classification ratings and minimum weights in effect today have been inherited for the most part from the time when 15 to 20 tons was a maximum car load. A number of important commodities, such as dry goods, for example, move at the same rates in carloads as in less than carload quantities. On a large number, if not the majority of articles of commerce listed in the classification, the difference between l.c.l and c.l. ratings is much too small to reflect the actual difference in cost of transportation in less than carload lots as compared with carloads.

Take for example small arms ammunition, the l.c.l. rating is second class and the c.l. rating (Western Classification) minimum weight 30,000 lb. is third class. This difference of only one class offers little inducement for a wholesaler or retailer to buy in carload quantities, and no inducement at all to load cars to capacity of 80,000 to 100,000 lb.

Minimum carload weights named in the classification are generally much lower than the car capacity. This is partly due to the fact that minimum weights have not been revised upward to the extent they might have been in view of the largely increased capacity of modern box cars, and partly to the fact that many shippers do not have capital or facilities necessary to handle freight in shipments loaded to the capacity of the car. Nevertheless, if lower rates were made on cars loaded to capacity than on cars loaded, let us say to half their capacity or one-third of their capacity many shippers would find it profitable to handle the capacity load instead of the small load.

The classification makers should wake up to the fact that it costs the shipping public money to handle high priced goods in units of large quantities, on account of capital invested in the large shipment, necessity of acquiring storage space, risk of deterioration and other commercial factors which discourage heavy loading of cars. Unless there is a concession made in the freight rate for the heavily loaded car of manufactured goods, it will usually be more profitable for shippers to handle such goods in l.c.l. or small c.l. units.

Permanent heavy loading of freight equipment would, therefore, be promoted by the following considerations: (1) Establish c.l. rates on all freight which may move in carload quantities; (2) Revise relationship of rates between l.c.l. and

c.l. quantities to reflect more nearly the lower cost of handling in carloads; (3) Increase c.l. minimum weights where possible to do so without imposing a hardship upon the shipping public; (4) Where commercial considerations necessitate low minimum c.l. weight, establish an alternative lower c.l. rate, applicable when the car is loaded to or approximating its capacity; (5) After accomplishing these reforms, give more consideration to furnishing cars adapted to the load for which they are ordered. Do not furnish a 100,000-lb. capacity car for loading a shipment of 60,000 lb. of freight when a lighter capacity car is available.

The Shipper Must Be Shown

By P. W. Coyle
Traffic Commissioner, St. Louis Chamber of Commerce, St. Louis, Mo.

The shipper is just as anxious to please his customer as the carrier is to please the shipper—hence general usages of trade must be observed. Often these usages, and the commercial units thus established, do not permit the shipper to give the intensified loading he might, without the risk of displeasing and possibly losing a good customer. However, the shipping public is disposed to exert its influence towards the expansion of the trade units to correspond more consistently with the minimum weights established by the carriers on carload business. In order to stimulate this, and to encourage the shipper in any such propaganda, the carriers, as a whole, should show—by clear, specific facts—that there is concerted action on their part to furnish promptly, and through a well defined system, available cars for loading; and that well established methods are in vogue for handling loaded cars expeditiously not only in train movement but through the terminals.

A shipper loses all enthusiasm for intensified loading that can possibly be inspired by glittering generalities, with respect to improvement in service and furnishing of equipment, when he gets neither. Most shippers are "from Missouri." Again, most shippers are from and *of* the United States, and they are always willing and anxious to co-operate on a perfectly frank and honest reciprocal basis, to the end that our transportation facilities may be so used as to contribute their full share to the development of the commerce of the country.

The shippers should load all cars to their maximum capacity as far as it is possible to do so without material injury to their trade, and that they should educate their patrons to deal in units of quantity to as great a degree as consistent, which will enable them to give intensified loading; that they should use great care in ordering cars, so as to get those of the minimum capacity suitable for their business; that they should not order cars beyond their capacity to load within the free time; and, it goes without saying, they should load and unload promptly. Every care, every activity and every sacrifice made in this respect redounds to the interest of all concerned by increasing the circulation of empty cars throughout the country.

The carriers should pool their cars or adopt such methods of distribution as will permit the use of all available equipment, regardless of actual individual ownership. It is suggested that no cars should be assigned to any particular class of traffic, except, of course, refrigerator and tank cars; and coal cars, in emergency. Obviously, cars suitable for the traffic peculiar to any particular section of the country should be kept in as close proximity to that section as economic conditions will permit, but not to the exclusion of their use for traffic of a different character when other cars are available.

There seems to be a great deal of lost motion and a waste of equipment in the handling of l.c.l. merchandise shipments in way freight or local service. It would seem more economical to provide cars of much smaller capacity (such as are used in England) more in keeping with the requirements for loading at the principal distributing centers to the larger points on the way division, so that such small cars loaded to their capacity might be switched at the intermediate points rather than haul a number of large capacity cars over a large percentage of the division with light loading.

The opportunity for intensified loading does not rest entirely with the shipper. In my estimation there are great opportunities in reach of the carriers in this respect. To illustrate: Often two or more lines, each operating through less carload merchandise cars to a common point, no one of which has sufficient tonnage to run a car daily, hold the cars under partial load, or the freight is accumulated in the freight house until sufficient tonnage is secured to justify sealing the car to the break bulk point. Thus, it may be that there are three roads each performing the same process of accumulating tonnage. Hence, there may be, and often is, delivered at three depots sufficient tonnage in the aggregate to justify running a daily car if it could be started from some one of these depots. Therefore, this class of traffic might well be pooled in the interest of full car loading and for the benefit of both the carrier and the shipper.

Another feature wherein the elements of conservation and intensified loading are involved, concerning which it would seem that modern facilities might be employed to good advantage: A large number of cars are used daily in transferring less carload shipments between the different depots. These hauls, in many cases, are long and through congested terminals, often consuming from one to five days in transit, and the cars are not loaded to capacity. It would seem that modern motor trucks might be used in this service to good advantage.

If the shipper does not load or unload a car promptly or fails to load to the minimum prescribed by tariff he pays for this delinquency in dollars and cents. When, however, he gives intensified loading it is a patriotic duty. In either event his record is open to immediate inspection.

The people, through proper legislation, have given the carriers rates which should yield the legally prescribed net revenue for the use of the facilities held and used by the carriers for transportation "under honest, efficient and economic management" as the law requires. The shippers are, therefore, entitled to have as specific information as can reasonably be given with respect to the furnishing of equipment and the movement of loaded cars in the several rate zones prescribed by the commission, so they may know that the required service is rendered. If this were given systematically at reasonable periods it would stimulate the spirit of co-operation.

Mexican Railways Lease American Equipment

Francisco Perez, director general of the National Railways of Mexico, returned last week to Mexico after some ten days spent in interviewing officers of some of the southwestern railroads particularly with reference to leasing locomotives and cars to relieve the congestion on the northern section of the government lines.

His trip was successful in that he secured 9 locomotives from the Illinois Central, 8 from the Missouri, Kansas & Texas, 10 from the St. Louis-Southwestern, 3 from the Gulf Coast Lines and several from the International & Great Northern. In addition 200 tank cars were leased from tank car lines at Houston, Tex. Of the locomotives leased, 20 will work between Matamoras, Saltillo and Tampico, where the traffic congestion is said to be especially acute.

Mr. Perez said that the National Railways now had 13,262 box cars in service as against 22,000 before the revolution, and that there were at present 581 locomotives in service and 161 awaiting repairs. Repairs have been held up, he said, due to the lack of materials, but with the recent placing of a $5,000,000 loan in this country in order to finance purchases of material this large percentage of bad order equipment should soon be materially reduced.

It was announced by I. Duhart, assistant general agent of the National Railways at New York, that the following orders for motive power and rolling stock had been placed since January 1: 11 locomotives, 100 tank cars, 25 box cars, 5 refrigerator cars and 100 second-hand Pullman tourist cars.

Rumors to the effect that W. G. McAdoo, formerly director general of railroads in the United States, who has been in Mexico City, would take charge of the administration of the National Railways of Mexico have been definitely denied both by Mr. McAdoo and by Director-General Perez. Rumors still persist, however, that Mr. McAdoo's visit has to do with a reorganization of the National Railways. According to one report, the former director general is representing the minority stockholders of the lines which were amalgamated to form the National Railways. The Mexican government, it is said, owns 51 per cent of the stock of the National, but the claims of the company against the government for damages to the property during the revolution are so great and the accumulated interest on the bonded indebtedness represents such a vast sum that, it is further stated, the ownership is really outside the hands of the government. It is said that President Obregon has expressed the opinion that the roads should be returned to their real owners.

Mr. Perez was accompanied on his trip by F. P. De Hoyos, general agent of the National at New York. The reception accorded the Mexican railway men was everywhere cordial—particularly at Houston, where the Chamber of Commerce gave a banquet in their honor.

Railroad Guaranty Bill Passed by House

WASHINGTON, D. C.

THE WINSLOW BILL, providing for partial payments to the railroads on account of the $300,000,000 to $400,000,000 still due them on their guaranty for the six months following the termination of federal control, on certificates of the Interstate Commerce Commission, was passed by the House on February 8 with very little opposition. An effort to pass the bill on the day before under a suspension of the rules had been defeated by vote of 220 to 111. To pass a bill under suspension of the rules requires a two-thirds majority and the failure of the bill on that occasion was attributed mainly to resentment on account of the effort of the Republican steering committee to jam the bill through with very little debate and without opportunity for amendment. Chairman Esch, of the House committee on interstate and foreign commerce, had proposed a rule which would have given opportunity for a debate, but the plan was changed by the steering committee, and several representatives who said they were in favor of the bill voted against the motion to pass it under suspension of the rules. On the final passage of the bill one amendment was adopted, proposed by Representative De Walt, which provides that when the commission, as authorized by the bill, makes estimates for deferred debits and credits, on agreement with the carriers, such estimates shall be prima facie, but not conclusive, evidence of their correctness in amount. The bill provided that such estimates should be binding in final settlements.

The principal opposition to the bill came from Representative Huddleston of Alabama, who frequently acts as the spokesman of the Plumb Plan League in the House; Representative Sims of Tennessee, who proposed an amendment that the railroads should be paid in certificates bearing 6 per cent interest instead of in cash, and Representative Blanton of Texas, who took the position that the bill would add another burden to the taxpayer on top of those that had already resulted from federal control of the railroads.

The bill as passed provides what several representatives during the debate said they thought had been provided when the transportation act was passed. It specifically authorizes the Interstate Commerce Commission, if not able finally to determine the whole amount due under Section 204 or Section 209 of the transportation act, to a carrier or the American Railway Express Company, to make its certificate for any amount definitely ascertained by it to be due, and thereafter in the same manner make further certificates until the whole amount due has been certified. The authority of and direction to the Secretary of the Treasury under such sections to draw warrants is made applicable to each such certificate. In ascertaining the several amounts payable, the commission is authorized in the case of deferred debits and credits which cannot at the time be definitely determined, to make, whenever in its judgment practicable, a reasonable estimate of the net effect of any such items and, when agreed to by the carrier or express company, to use such estimate as a definitely ascertained amount in certifying the amounts payable under either of such sections and such estimates so agreed to shall be prima facie, but not conclusive, evidence of their correctness in amount.

The bill is expected to be taken up in the Senate possibly by the end of the week and efforts will be made to expedite its passage.

In explaining the purpose of the bill, Representative Esch said that the guaranty provision was inserted in the transportation act because Congress knew that the railroads had not earned their compensation during the 26 months of federal control by hundreds of millions of dollars.

"We knew," he said, "that they had not earned it for any of the 26 months of federal control, save three. We knew that there were pending obligations with the director general of railroads for increases of wages. We knew that those applications had not been acted upon by the director general of railroads. We knew that these men had been put off from time to time on promises that their wages would be increased. We knew, further, that we had to provide for such an emergency.

"One thing we did not know, however, was that the Railroad Labor Board would not be appointed by the President for six weeks after the law became operative. We did not know that within one month after federal control there would be an unlawful strike involving from 40 to 60 per cent of the yardmen and switchmen in the great freight-producing centers of the United States. Those things we did not know, but the transportation act by guaranteeing the standard return for the six months enabled the carriers to operate notwithstanding these severe handicaps. Without it the transportation system would have failed before the six months would have expired. The $600,000,000 required to make good the guaranty is chargeable in part to the order of the Railroad Labor Board of July 20, 1920, retroactive to the first of May, 1920, which meant that for four months of the six months of the guaranty period the railroads had to pay over $200,000,000 additional wages. The guaranty provision is a legal obligation. This bill seeks to permit the payment of what is left unpaid of that guaranty by means of partial payments. The Interstate Commerce Commission, complying that the language of the law we had passed justified partial payments, issued certificates therefor. The comptroller of the Treasury, however, held that this could not be issued. The result will be a delay of weeks, months and, in some cases, years before settlements can be made. In the

meantime the railroads cannot pay for supplies; the supply people cannot pay their employees. As a result many institutions have cut down their working forces and some have shut down their plants because they cannot get the money which the railroads claim is due them. In this bill we simply want to give the Interstate Commerce Commission the right to issue certificates for partial payments and have them honored by the Treasury Department so that the railroads can get this money, so that unemployment can be reduced, and so that this money can be put into circulation, and so that business may be restored."

After the failure to pass the bill under suspension of the rules, the rules committee brought in a special rule providing for one hour of general debate and five minute speeches on amendments. Several of the speakers pointed out that the bill did not involve any additional expenditure, but merely provided for the prompt payment of a part of the money which had already been appropriated and which it had been assumed had already been provided for. Several amendmens were proposed designed to safeguard the government by requiring a bond in case of any over-certification, but these were defeated after it had been explained that the certificates for partial payments made by the commission merely provided for such amount as cannot be reduced by further accounting or otherwise and is certainly due the railroads. Representative Bland of Indiana said that the railroads owe the coal operators of his state $5,000,000 and in his district alone they owe $1,849,000. Representative Goodykontz said that the representatives who were opposing the bill are what are commonly known as the "Plumb Planners" who would like to see the whole American railway system collapse.

A motion to re-commit the bill to the committee for an amendment to provide that no carrier shall declare a dividend after receiving a partial payment until it shall first make settlement of all valid judgments unpaid against it, was defeated by vote of 189 to 74.

While the bill was being debated in the House, arguments were being heard before the Court of Appeals of the District of Columbia on the petition of the Grand Trunk Western for a writ of mandamus to compel the Secretary of the Treasury to honor a partial payment certificate issued by the Interstate Commerce Commission in its favor for $500,000. The petition had been denied by the Supreme Court of the District of Columbia which had sustained the ruling of the comptroller of the Treasury and the railroads appealed the case. Alfred P. Thom and J. Harry Covington, representing the railroads, argued that the transportation act placed discretion as to the issuance of certificates in the hands of the Interstate Commerce Commission and that the only function of the Secretary of the Treasury in the matter was a ministerial one of drawing warrants on the commission's certificates. District Attorney Laskey argued that it was the duty of the Treasury Department to see that the certificates of the commission were in proper form as authorized by the law and that the law merely provides for one final certificate in the case of each carrier.

Senator LaFollette has offered in the Senate an amendment intended to be proposed by him to the Townsend bill, which is similar to the Winslow bill passed by the House, providing that no payment of money shall be made to any railroad company under the transportation act until it shall be determined by the Interstate Commerce Commission upon full investigation that the company has not since March 1 paid or contracted to pay unreasonable and extravagant prices for railway supplies, equipment, repairs and renewals charged to its maintenance account or that it has not paid or agreed to pay unreasonable sums as salaries to its officers or directors or that it has not otherwise managed and conducted its business in a dishonest, inefficient or uneconomical manner in violation of the terms of the transportation act.

Freight Car Loading

WASHINGTON, D. C.

FREIGHT CAR LOADING continued to decrease during the week ending January 29, according to the weekly report compiled by the Car Service Division of the American Railway Association, but principally because of the continued falling off of the coal and ore movement. The loading of most other commodities has been increasing during January while the number of cars loaded with coal and ore has decreased. The total number of cars loaded with revenue freight during the week was 699,936, as compared with 703,115 for the preceding week and 803,332 for the corresponding week of last year. For the corresponding week of 1919 the loading was 718,297 and for 1918 it was 642,016. Throughout January the loading has been above that for January, 1918, when a condition of congestion prevailed and the winter weather was unusually severe. For the week ending January 30 the car surplus was 324,186 and the shortage was 810. The summary of the report follows:

REVENUE FREIGHT LOADED AND RECEIVED FROM CONNECTIONS

SUMMARY—ALL DISTRICTS, COMPARISON OF TOTALS THIS YEAR, LAST YEAR, TWO YEARS AGO. FOR WEEK ENDED SATURDAY, JANUARY 29, 1921

Districts	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Mdse. L. C. L.	Miscellaneous	Total revenue freight loaded: This year 1921	Total revenue freight loaded: Corresponding year 1920	Total revenue freight loaded: Corresponding year 1919	Received from connections: This year 1921	Received from connections: Corresponding year 1920	Received from connections: Corresponding year 1919
Eastern	1921	5,587	3,681	43,115	1,077	8,161	888	43,146	53,523	159,178	.....	.....	187,665	.....	.....
	1920	5,154	4,063	49,175	3,336	7,656	1,858	32,260	84,687	.....	188,189	175,375	.....	214,517	203,385
Allegheny	1921	2,543	3,556	49,051	6,245	3,868	2,007	33,349	46,904	147,523	.....	.....	101,261	.....	.....
	1920	2,508	3,544	50,357	3,695	4,203	1,998	36,203	65,462	.....	167,970	157,199	.....	119,582	132,802
Pocahontas	1921	213	109	17,685	187	1,339	99	2,462	4,983	27,077	.....	.....	13,096	.....	.....
	1920	165	130	19,717	691	1,872	246	139	9,002	.....	31,962	30,058	.....	19,640	19,222
Southern	1921	3,928	2,189	23,182	549	13,284	1,153	34,916	30,001	109,202	.....	.....	50,923	.....	.....
	1920	4,473	2,769	26,853	211	14,963	2,523	18,651	54,929	.....	125,372	106,937	.....	60,919	66,872
Northwestern	1921	11,311	9,372	5,710	1,283	17,367	1,250	22,748	26,621	95,662	.....	.....	47,023	.....	.....
	1920	9,671	8,804	13,300	1,237	17,183	1,766	19,210	37,253	.....	108,424	98,264	.....	55,044	52,505
Central Western	1921	11,261	11,580	18,960	324	3,178	1,884	27,046	29,442	103,675	.....	.....	45,140	.....	.....
	1920	10,173	12,302	23,041	421	5,133	2,888	21,320	45,063	.....	120,341	99,500	.....	65,486	58,723
Southwestern	1921	4,987	1,881	4,949	84	6,480	412	15,456	23,370	57,619	.....	.....	44,076	.....	.....
	1920	4,360	2,547	6,470	169	7,071	422	14,844	25,191	.....	61,074	50,964	.....	54,650	44,200
Total all roads	1921	39,830	32,368	162,652	9,749	53,677	7,693	179,123	214,844	699,936	.....	.....	489,184	.....	.....
	1920	36,504	34,159	188,913	9,760	58,081	11,701	142,627	321,587	.....	803,332	.....	.....	589,838	.....
	1919	32,251	31,958	161,752	.....	55,966	15,057	.....	421,313	.....	.....	718,297	.....	.....	577,709
Increase compared	1920	3,326	.....	.....	.....	.....	.....	36,496	.....	.....	.....	.....	.....	.....	.....
Decrease compared	1920	.....	1,791	26,261	11	4,404	4,008	.....	106,743	103,396	.....	.....	654	.....	.....
Increase compared	1919	7,579	410	900	9,749	.....	.....	179,123	.....	.....	.....	.....	.....	.....	.....
Decrease compared	1919	.....	.....	.....	.....	2,289	7,364	.....	206,469	18,361	.....	.....	88,525	.....	.....
January 22		46,695	35,255	168,453	11,177	49,159	7,991	176,581	207,804	703,115	804,866	734,293	491,640	589,000	608,751
January 15		44,861	35,125	183,228	10,483	45,241	9,590	173,500	207,860	709,888	840,524	758,609	509,708	627,293	609,260
January 8		39,690	31,494	190,284	11,479	42,982	10,717	169,093	210,674	706,413	830,673	723,801	492,817	596,859	543,265
January 1		30,098	23,950	170,224	10,550	32,635	8,340	144,657	178,451	598,905	745,446	612,741	453,537	591,437	525,055

L. C. L. merchandise loading figures for 1921 and 1920 are not comparable as some roads are not able to separate their L. C. L. freight and miscellaneous of 1920. Add merchandise and miscellaneous columns to get a fair comparison.

General News Department

The Air Brake Association has selected the Hotel Sherman, Chicago, as the meeting place for the 28th annual convention which will be held on May 3-6, 1921.

The spring meeting of the American Society of Mechanical Engineers will be held at the Congress Hotel, Chicago, on May 23 to 26. Sessions are planned by the professional sections on aeronautics, fuel, management, material handling, machine shop, power, forest products and railroads, the details of which will be made public later.

A preliminary compilation of the revenues and expenses of the railroads for the month of December indicates a net operating income for that month of only about $23,000,000, whereas to earn a 6 per cent return provided for by the transportation act the roads should have earned about $86,000,000. Returns for 157 of the larger roads showed a net operating income of $14,000,000.

The directors of the Gulf Coast Lines, acting in behalf of a group of the principal owners of the road, have offered a limited amount of the stock, of the constituent companies, to employees at $65 a share (par value $100). According to the announcement, the company will guarantee returns of six dollars a share on this stock for a period of 30 months.

Prof. W. Z. Ripley of Harvard University, who has been engaged by the Interstate Commerce Commission to report on a tentative plan for the consolidation of the railroads into a limited number of systems, has submitted to the commission a report proposing a plan applying to the eastern railroads and is expected to submit his report on the western and southern roads later in the month.

William Mitchell Acworth, the well-known English economist and writer, is now Sir William Acworth, the title of Knight Bachelor, conferred by the Viceroy of India and approved by the King of England, having been announced in London on January 12. Sir William is chairman of a governmental committee which has been appointed to inquire into the administration of the railroads of India, and he is now in that country. Sir William's books on railroad affairs are among the best, and the best known, in the English language. His detailed and thorough knowledge of the philosophy and the history of railroad economics in all the countries of the world is unique, and he is sure to illuminate every feature of railroad management or operation on which he writes. In the important doings of the British Government, and of Parliament, in connection with the railway reorganization plans of the past two years Sir William has had an active share.

New York Railroad Club Meeting

J. J. Mantell, manager, New York Region, Erie Railroad, will speak on "Transportation Problems of the Metropolitan District" at the meeting of the New York Railroad Club in the Engineering Societies Building, New York, on Friday evening, February 18.

Safety on the Southern Pacific

The Southern Pacific reports substantial diminution in certain casualty records for 1920. Deaths of employees by accident were fewer by seven, or 13.2 per cent, as compared with 1919, and 17, or 27 per cent, compared with 1918. The number of persons killed in grade crossing accidents per million locomotive miles was 0.95, in 1920, compared with 1.40 in 1919, a decrease of 32 per cent.

There was a total of 760 highway crossing accidents in 1920, of which 393 were caused by attempts to cross tracks in front of trains; in 163 cases, or more than 21 per cent of the total, automobiles were run against trains; 116 automobiles stalled on the track and were hit by trains; 19 skidded into a train or a car; 53 ran into and broke down crossing gates; three ran down and injured crossing flagmen, and 13 accidents resulted from miscellaneous causes.

During the year 1920, 195 meetings were held of safety committees, at which 4,490 safety suggestions were discussed; 182 papers were read on accident prevention and 70,408 employees were talked to individually by members of safety committees.

United Engineering Society—Board of Trustees

At the annual meeting of the Board of Trustees of United Engineering Society, on January 27, the following persons were elected officers of the society for the ensuing year: President, J. Vipond Davies; vice-president, Calvert Townley; vice-president, W. L. Saunders; secretary, Alfred D. Flinn; treasurer, Joseph Struthers; assistant treasurer, George H. Pegram.

Engineering Council and A. S. M. E. to Meet in Syracuse

Herbert Hoover will be the principal speaker at a meeting in Syracuse on February 14 at which it is expected the plans of the American Engineering Council for dealing with industrial relations and, particularly, with the waste due to unemployment will be outlined. On the following day, February 15, the National Council of the American Society of Mechanical Engineers will meet.

Resolution Regarding Dangerous Highway Crossings

Representatives of organizations attending the National Conference on Highway Traffic Regulations, held at Washington, D. C., from January 9 to 12, 1921, adopted resolutions recommending increased protection for grade crossings by giving special attention to the most dangerous ones. The detailed resolutions were:

RESOLVED, That this Conference express its approval of the present efforts to eliminate dangerous grade crosings, and recommend that, so far as practicable, dangerous grade crossings be both avoided in future construction and eliminated in existing construction.

Pending the removal of such crossings, this Conference recommends that the proper authorities be authorized to classify grade crossings as "ordinary" and "dangerous," and require the latter, in addition to standard grade crossing signs, to be marked with uniform and conspicuous signs specifying the speed with which such crossings may be crossed, obedience to such speed restrictions to be required by law.

RESOLVED, That this Conference recommend that red lights be used as signals of extreme danger and for no other purpose except for vehicle tail lights; and that green lights be used as traffic regulation or direction signs and for no other purpose.

RESOLVED, That this Conference, recognizing the need for a uniform system of highway signs, request the U. S. Bureau of Standards to make a study of signs, including colors, size and arrangement of letters, height and location.

Representatives of the American Railway Association and the American Electric Railway Association were present and voted; as well as members of various automobile associations, safety associations, police and highway associations and the National Safety Council.

Instruction in Kiln Drying

The February course in practical kiln drying of lumber, given by the Forest Products Laboratory at Madison, Wis., will be held from February 14 to 25. The instruction in the course is not confined to any particular kind of lumber or type of kiln, although methods of drying different species of lumber and the operation of various types of kilns are discussed. Emphasis is laid on the underlying principle of suc-

cessful kiln drying and these can be adapted to any conditions. The course will be particularly concerned with ways and means to cut down present losses in seasoning, both outdoors and in the kiln. The following are some of the subjects covered: Testing lumber while drying; methods of preventing checking, case hardening, warping and collapse; regulation of temperature, humidity and circulation in the kiln; advantages and disadvantages of different types of kilns and kiln equipment, and identification of lumber. A co-operative fee of $150 per person is charged to pay the expenses of conducting the course.

The practical course of instruction at the laboratories in boxing and crating, which was given from January 10 to 15, will be repeated March 7 to 12 and May 2 to 7. Registrations for these courses can be made by mail for either date.

A. R. A. Names Executive Committee

The secretary of the American Railway Association, J. E. Fairbanks, has announced the personnel of the executive committee for the calendar year 1921 as follows: Division I, Operating, General W. W. Atterbury; Division II, Transportation, E. J. Pearson; Division III, Traffic, C. H. Markham; Division IV, Engineering, H. G. Kelley; Division V, Mechanical, W. B. Storey; Division VI, Purchasing and Stores, W. G. Besler; Division VII, Freight Claims, N. D. Maher.

I. C. C. Appropriation

The Senate on February 8, disagreed to an amendment of its appropriation committee proposing a reduction from $1,900,000 to $1,600,000 in the appropriation for the general expenses of the Interstate Commerce Commission. The appropriation for the present fiscal year was $1,600,000 and the commission had asked for $2,160,000, but the House cut it to $1,900,000 and the Senate committee attempted to cut it to the figure for this year. The action of restoring the figure to that set by the House was taken after a considerable discussion of the expenses of this commission and of the Federal Trade Commission, in which one or two senators criticized the salaries paid by the Interstate Commerce Commission. Senator Smoot started to read a list of the salaries, including the chief counsel, director of service, director of finance, director of traffic, at $10,000 a year each, one assistant counsel at $6,500 and another at $5,000. Senator Warren read a letter from Chairman Clark of the commission inviting attention to the fact that the transportation act very largely increased the jurisdiction and duties of the commission and that the intelligent consideration and determination of some of the new questions placed within the commission's jurisdiction required men of capacity, unquestioned integrity, experience and industry. The commission has never expended a dollar, he said, for salaries or in any other direction which it did not feel was fully justified in the interests of the service and it has not in any instance fixed a salary that did not seem to be imperatively necessary in order to induce men to enter the service rather than to accept offers from outside the government service which from the sole point of salary were more attractive.

Heavy Electric Traction Program for A. E. R. A.

The committee on heavy electric traction of the Engineering Association of the American Electric Railway Association has made preliminary assignments on the subject of heavy electric traction about as follows:

1. Co-operate with the American Railway Engineering Association regarding progress in heavy electric traction with a view to keeping the members of the American Railway Engineering Association posted on developments in the field. In this connection cover foreign practice as well as that in the United States.

Much of the information pertaining to foreign electrification will be obtained from the files of H. W. Cope and from the General Electric Company. Any additional information which is deemed desirable will be obtained by correspondence.

2. Continue compilation of statistics regarding electric locomotives.

Last year's committee issued a number of questionnaires regarding equipment to America's electrified railroads, and to industries operating electric locomotives. The results, however, were not entirely satisfactory, comparatively little information being obtained. In order to attack the subject from a different direction, Mr. Cope will undertake to go over the list of companies which are using Westinghouse equipment and will tabulate information from the engineering files of the Westinghouse Company. A. H. Armstrong, chairman of electrification committee, General Electric Company, will be requested to compile similar data from the files of the General Electric Company.

It was the consensus of opinion that locomotives and multiple unit car tabulations should be continued. The subject "Locomotives" will include locomotives with four driving axles, and multiple unit cars will include equipment in which the trailers, as well as motor cars, are equipped with controllers for operating from either end. Equipment which does not conform strictly to these limits may be included at the discretion of the traction committee.

3. Continued study of electric switching engines.

Records of electric switching results are scarce, as few companies operate electric switches extensively and some data will probably be obtained regarding steam switching and further data selected on electric switching as it becomes available.

4. Study the subject of multiple unit cars vs. electric locomotives in passenger service and report on the percentage of service given by means of such cars.

There are virtually but three railroads in this country which operate both multiple unit and locomotives equipment electrically, and information necessarily will come from these railroads. C. H. Quereau, superintendent electrical equipment, New York Central, will take charge of obtaining and compiling data on this subject.

Boston Mayor Opposes Consolidation of New England Roads

In his annual message to the City Council, Mayor Andrew J. Peters devotes several paragraphs to the proposals advanced as to the possible consolidation of the New England carriers with carriers west of the Hudson River.

"The Transportation Act," says Mr. Peters, "provides that the Interstate Commerce Commission shall prepare and adopt a plan for the consolidation of the railways of the United States into a limited number of systems and which would provide that 'wherever practicable the existing routes and channels of trade and commerce shall be maintained.' Studies of this problem are now being made and will soon be considered for recommendation for action by the Interstate Commerce Commission.

"One plan under consideration is that the New Haven system shall be consolidated with the Pennsylvania Railroad, and that the Boston & Maine and Northern railroads shall be joined to the New York Central. Another plan is that the New England roads shall be consolidated in one or two systems.

"The proposed consolidations of the New England railroads with the Pennsylvania and New York Central would be a most unfortunate catastrophe for all New England, especially for the people of Boston. This transfer would take the control and direction of our railroads away from Boston and place them in the hands of interests in New York or elsewhere. To such interests the problems of New England would be of minor importance, and the intimate touch with local conditions so essential in this situation would be entirely lacking.

"I am deeply opposed to any consolidation which would give to the railroads west of the Hudson River the power to determine whether New England should develop its present industrial facilities, or become the rich man's summer playground. These railroads would take over the New England roads provided only that such a consolidation was profitable to their stockholders. Such profit could come only at the expense of New England.

"Our manufacturers would have new difficulties in reaching western markets. At the present time New England shippers can ship west over any of six trunk lines, but, were the New Haven consolidated with the Pennsylvania under the ruling of the Interstate Commerce Commission, the latter road could

compel New England freight, originating on its lines, to move over its own rails to Chicago or its other western terminals. So, shippers would have but one line in place of six. In export traffic, it is easy to see that the Pennsylvania road would do its export business at its own terminals in Baltimore, Philadelphia, or New York, rather than haul its ocean-bound freight the additional distance to Boston. With the harbors of Boston and New England, and a proper amendment of our Interstate Commerce Act, it would be possible for a New England road to develop its water connections and, by the aid of water routes, reach any of the distributing points of our country."

Relations of Employer and Employee

L. F. Loree, president of the Delaware & Hudson Company, speaking before the Chamber of Commerce of the State of New York at a meeting held in New York City on February 3, objected to resolutions proposed by the committee on industrial problems, and proposed instead thereof a resolution calling for the proper incorporation of both employee-unions and employer-unions. The committee had proposed to seek legislation, both at Washington and Albany, looking to the endorsement of the views on the settlement of industrial disputes which were set forth in the report made by the President's Industrial Conference last March. The Chamber of Commerce committee had in mind particularly street railway conditions and the public service interests of similar character, but the resolution as well as Mr. Loree's proposal is of interest in the whole industrial field.

Mr. Loree said, in part:

"What are the roots of the labor trouble? They are eighty years old and should be familiar to all of us. First, they are founded on the basis of discontent. Properly regulated, discontent is a necessary function of success; but let it run wild, and it leads to anarchy.

"The second thing is the attitude of labor on the closed shop question and the boycott.

"The third is the organization of secret societies, which cannot, I think, be looked upon with unconcern by any civilized government, and particularly by any person who has reflected upon the Jacobin movements which preceded the revolution in France, or who bears in mind the actions of those who are threatening the life of the British government today. So I suggest that this substitute be adopted in place of the report of the committee:

"Be it resolved, That the Chamber of Commerce of the State of New York appeals to the Legislature of the State of New York to enact legislation to give effect to the recommendations of Governor Nathan L. Miller in his annual message to reform the organization and powers of the Industrial Commission so as to provide for a single-headed commission, with a board of three, to be allotted to discharge exclusively quasi-judicial and legislative functions, and to be clothed with authority to investigate labor conditions and to deal with labor disputes; and to that effect legislation be enacted:

"1. To declare all organizations having for their purpose the control of wages or conditions of employment, by joint action on the part of employees or employers, to be charged with a public interest, and hence properly and necessarily subject to public supervision and regulation.

"2. To provide that all such organizations shall have capacity to hold property and sue and be sued, in their corporate names, in all respects as though they were individuals.

"3. To provide for the supervision of the accounts and records of such organizations, including insurance funds and similar activities, in the same way that the accounts and records of street railway and similar corporations are supervised.

"4. To provide for the supervision of every vote upon the question of ordering a strike, including the following: (a) no such vote to be taken until after a summary inquiry by public authority concerning the matters in dispute, (b) every person voting to be furnished with a statement made by public authority of the results of such inquiry, (c) every such vote to be taken by secret ballot, and (d) an honest count and freedom from intimidation and corrupt influence to be safeguarded by public authority."

Traffic News

The Transportation Club of Louisville, Ky., will hold its annual banquet on February 24.

The railroads of Ohio have made a general advance in passenger rates, to the basis of 3.6 cents a mile, in accordance with the order of the Interstate Commerce Commission, and corresponding to the rates which the Commission has prescribed for interstate passenger fares. It is understood that officers of the State of Ohio will, if not successful in their present proceedings in the lower court, appeal to the United States Supreme Court against this federal action.

New England Hearings Concluded

The hearing before an examiner of the Interstate Commerce Commission on the application of the New England lines for larger rate divisions was brought to a conclusion on February 7 after a day had been devoted to rebuttal testimony. This, it was generally understood, was purely for the record because it was expected an adjustment would be reached as a result of the letter ballot which is being taken on the plan to raise a fund of $15,000,000 among the trunk lines to be distributed among the New England lines.

Prof. W. J. Cunningham of Harvard University replied to the testimony offered at the previous hearing by W. H. Williams, chairman of the Wabash, which had attributed the difficulties of the New England lines to local conditions and factors involving the efficiency of operation, rather than to insufficiency of rate divisions. Mr. Williams also took the stand again, and several other witnesses testified regarding details of operation and rate-making.

Post Office to Pay Railroad Administration

As briefly noted in last week's issue the post office department has asked Congress for a deficiency appropriation of $65,575,832 for the amount due the Railroad Administration for the retroactive increase in railway mail rates for the period of federal control.

The sum named has been agreed upon by officials of the Post Office Department and the Railroad Administration as the balance due for the service performed during the period named, with the exception of certain sums now a matter of litigation in the Court of Claims for the performance of incidental side, terminal and transfer service which the department contends is not specifically chargeable prior to March 1, 1920.

The amount of this adjustment was determined as follows:

"The average monthly earnings of the railroads during the 18 months from January 1, 1918, to June 30, 1919, was $4,345,635.10. This period was used as a basis for the reason that practically all accounts had been adjusted for that period under the former basis of pay. At that rate the pay for the 26 months of federal control (26 times $4,345,635.10) would have been $112,986,512.60. Applying to this sum the flat increase of 57 per cent agreed to at conferences with officials of the Railroad Administration, the increased earnings of $64,402,312.18 was realized. The aggregate earnings for the entire period at the increased rate is therefore $177,388,824.78.

"To this debit the following credits should be applied:

Fines	$431,926.04
Advance payments during the period from July 1, 1919, to Feb. 29, 1920, on routes where final adjustments were not made	19,806,554.49
Final adjustments at the rates authorized in the Interstate Commerce Commission's order No. 9200	2,540,061.70
Final adjustment at the rates authorized by the act of July 28, 1916	10,813,018.69
Aggregate payments for this service performed from Jan. 1, 1918, to June 30, 1919	78,221,431.83
Total	111,812,992.75

Commission and Court News

Interstate Commerce Commission

The Interstate Commerce Commission has rendered its decision in the Michigan passenger fare case ordering increases in the intrastate rates corresponding to those allowed for interstate traffic.

The commission has suspended until June 7 the proposed withdrawal of the interchangeable acceptance arrangements applying on 60-trip commutation tickets of the Baltimore & Ohio and the Pennsylvania between Baltimore and Washington.

The commission has further suspended until April 2 the operation of a supplement to a Minneapolis & St. Louis tariff which provides for the cancellation of joint through rates on coal from mines on the Minneapolis & St. Louis in Illinois to destinations in Michigan and Alexis, Ohio.

The Interstate Commerce Commission has suspended from February 5 until June 5, 1921, the operation of certain schedules shown in a supplement to a Minneapolis & St. Louis tariff which propose increased proportional commodity rates on grain and flour, carloads, from Council Bluffs, Ia., Omaha and South Omaha, Neb., (when originating beyond) to Duluth, Minn., Superior, Wis., and certain other points taking same rates.

The Interstate Commerce Commission has issued a correction of its order authorizing increases in intrastate freight rates in Illinois. The order erroneously provided that the increases authorized were to be applied to the rates in force. As the rates had been increased under the order of the Illinois commission by a percentage less than that authorized by the commission in the general rate case, the order was amended to provide that increases shall be applied to the rates in force on August 25, 1920.

The Interstate Commerce Commission has vacated its suspension of numerous tariffs filed by Agents W. J. Kelly and F. A. Leland, which in putting into effect the rate increases authorized by the Interstate Commerce Commission in Ex Parte 74 made increases of 35 per cent in class and commodity rates between eastern and southern groups and the Southwest. The tariffs were suspended under protest of various shippers that the commission's order provided for an increase of 33⅓ per cent in these inter-territorial rates. The commission finds that 35 per cent was properly applied as to certain inter-territorial rates based on combinations, but its suspension stands as to many of the tariffs.

Court News

Exclusive Privilege to Solicit Business On Railroad Premises in Kansas

The Kansas Supreme Court, reviewing the cases in the various jurisdictions on either side of the question, holds that a railroad company may grant an exclusive privilege to one carrier of passengers and merchandise and exclude all others who desire to go upon its premises for the sole purpose of soliciting customers or business.—Mader v. City of Topeka (Kan.), 189 Pac. 969.

Contributory Negligence at Flag Station

There is no law or custom requiring a train to stop on any particular spot even at a regular station, let alone at a flag station, and especially at one with no mark for indicating where passengers are to stand for boarding the train; and the Louisiana Supreme Court holds that one who, after assisting a friend to flag an approaching train, started walking down the track, on the theory that the train would stop before it reached him, was guilty of contributory negligence. Wells v. M. L. & T. (La.), 84 So. 492.

Boiler Inspection Act Does Not Apply to Locomotive Cab

The New York Appellate Division holds that the federal Boiler Inspection Act, requiring locomotive boilers and appurtenances to be kept safe, does not apply to a locomotive cab, so that sections 3 and 4 of the Employers' Liability Act, precluding the defenses of contributory negligence and assumed risk, where a safety act is violated, do not deprive the railroad of these defenses in an action for injuries caused by a depression in the floor of the cab. A cab is not appurtenant to a boiler, and the intention of the act was to guard against accidents peculiar to boilers.—Brown v. L. V., 191 App. Div. 691, 181 N. Y. Supp. 800.

State Commissions

The Railroad Commission of Louisiana, following a re-hearing in connection with the order issued by the Commission last March, requiring the Louisiana Railway & Navigation Company to improve its roadway, has annulled and cancelled the proceedings against the railway, in which a fine of $1,000 was imposed, with the threat of $100 a day for each day in which the Commission's order was not complied with. The testimony shows that the railroad has within two years spent about $2,000,000 in improving its roadway and its plant generally; that abnormal weather conditions have prevailed throughout the past two years, and that the officers are in good faith prosecuting the work necessary to put the road in good condition. A number of patrons of the road testified that strenuous efforts were being made to give good service.

Personnel of Commissions

Charles P. Coady, at present a member of congress, has been appointed a member of the Public Service Commission of Maryland, succeeding James C. Legg, deceased.

H. D. Lyon, heretofore inspector, has been appointed senior railway signal engineer, Bureau of Safety, Interstate Commerce Commission, and has been assigned to work in connection with tests and development of automatic train control devices under Section 26 of the Interstate Commerce Act. Investigation of railroad accidents will continue to be a part of his duties. Mr. Lyon had his first signal experience as a helper in the installation of electro-pneumatic block signals on the Central of New Jersey about 1892; his subsequent experience ranged from helper to foreman in construction work for the Union Switch & Signal Company and the Standard Signal Company; he also held positions as signalman on the Central of New Jersey, maintainer on the New York Central, maintainer and inspector on the Interborough Rapid Transit Company, and assistant chief inspector, general inspector and field engineer on the New York Central. In January, 1910, he resigned from the New York Central to become inspector for the Block Signal and Train Control Board of the Interstate Commerce Commission, and was engaged in engineering work in connection with investigation of block signals and automatic train control devices until the Board was abolished in June, 1912. He was thereafter assigned to the Bureau of Safety and has served as an inspector in that bureau until the present time.

H. D. Lyon

Equipment and Supplies

Locomotives

THE MEMPHIS, DALLAS & GULF is inquiring for 1 locomotive.

Freight Cars

THE FRUIT GROWERS EXPRESS is inquiring for 100 steel underframes.

THE RHODESIAN RAILWAYS are inquiring, through the car builders, for 15 cars.

THE LACKAWANNA STEEL COMPANY, Buffalo, New York, is inquiring for from 100 to 200 flat cars of 70 tons capacity.

THE DELAWARE, LACKAWANNA & WESTERN has ordered 40 caboose cars from the Mt. Vernon Car Manufacturing Company.

CHARLES P. PERIN AND S. M. MARSHALL, 1107 Broadway, New York, are asking for prices on 300 steel ore hopper cars and 500 steel coal hopper cars, to be of 50 tons capacity, for export to India.

THE TENNESSEE COAL, IRON & RAILROAD COMPANY has ordered 150 70-ton gondola cars from the Chickasaw Shipbuilding Company and not 157 70-ton as incorrectly reported in the *Railway Age* of February 4 (page 347).

Passenger Cars

THE CHICAGO, BURLINGTON & QUINCY is inquiring for 10 dining cars.

THE BESSEMER & LAKE ERIE, reported in the *Railway Age* of December 3, as being in the market for 8 steel coaches, 4 baggage cars and 3 combination mail and baggage cars, has renewed its inquiry for this equipment.

Iron and Steel

THE MISSOURI, KANSAS & TEXAS has ordered 14,000 tons of rails from the Illinois Steel Company.

THE CHICAGO & EASTERN ILLINOIS has ordered 2,500 tons of steel rails from the Illinois Steel Company.

THE OREGON-WASHINGTON RAILROAD & NAVIGATION COMPANY has ordered 10,000 tons of rails from the Illinois Steel Company.

Miscellaneous

THE CHICAGO & EASTERN ILLINOIS has ordered 100 per cent rail joints from the Rail Joint Company, to be used with the recent order for 2,500 tons of steel rails ordered from the Illinois Steel Company, 750 tons of which are 100-lb. rail.

Trade Publications

GATE, GLOBE, ANGLE AND CHECK VALVES.—The Walworth Manufacturing Company, Boston, Mass., has issued a six-page folder which illustrates the diversified line of brass valves which this company manufactures. A list is included showing the sizes in which the various types are made and giving a list of prices. The circular calls attention to the fact that the Walworth Manufacturing Company has been making valves since 1842.

CANADIAN TIES FOR INDIA.—The Canadian government steamer "Canadian Inventor" has sailed from Vancouver, B. C., for Calcutta, carrying creosoted ties from the Vancouver Creosoting Plant; 3,800,000 feet. The ties are being sold in competition with Australian woods.

Supply Trade News

T. T. Bond, formerly traffic manager of Fairbanks, Morse & Co. at Chicago, has been elected vice-president of **Harry C. Wood & Co.,** freight brokers and forwarders, New York.

John L. Bacon has been appointed manager of service and inspection department of the **Franklin Railway Supply Company,** with headquarters in New York. Mr. Bacon was formerly district manager of the Cleveland office of the same company.

G. Lewis Taylor, for the past 12 years assistant chief engineer of the McClintic-Marshall Company, Pittsburgh, Pa., has been appointed chief engineer, succeeding the late **Paul L. Wolfel.** Mr. Taylor graduated from the University of Pennsylvania in 1900.

A. D. Graves, who has been appointed general manager of **Pratt & Lambert, Inc.,** Buffalo, N. Y., as was announced in the *Railway Age* of January 28, is a native of Ohio, his boyhood having been spent in Columbus. He was a bookkeeper in a wholesale drygoods house for nearly five years previous to entering the employ of a concern manufacturing varnish. In 1908, he started as a salesman for Pratt & Lambert and spent the next ten years in developing trade in Philadelphia and vicinity, when he became manager trade sales. Mr. Graves is one of the successful 12 Pratt & Lambert men whose high percentage of sales won them a trip to Europe in the summer of 1914.

A. D. Graves

Theodore L. Dodd has been elected vice-president and a member of the board of directors of the **Alleghany Steel & Tube Company,** with headquarters at Chicago. Mr. Dodd will have jurisdiction over the sales in the Middle West, extending to the Pacific coast.

B. A. Bell, railway specialist for the **Western Electric Company,** has been appointed railway representative of this company at Atlanta, Ga., effective February 1, succeeding J. W. Smith. Before taking up the duties of railway specialist Mr. Bell was general salesman for the Western Electric Company.

The Forman-Bassett Company, Cleveland, Ohio, have opeped new headquarters in the Hotel Cleveland for the sale of the **General Fireproofing Company's** line of steel office equipment, expanded metal lath, concrete reinforcements and waterproofing compounds. **F. W. Wagner** is sales manager in charge of the branch.

The **Austin Machinery Corporation of Louisiana** has been incorporated under the laws of that state as distributors for Louisiana, Arkansas, Mississippi and Tennessee for the products of the Austin Machinery Corporation. The capitalization is represented by $100,000 of preferred stock and $200,000 of common stock. The general offices of the corporation will be at 1020 Maison Blanche Building, New Orleans, La.

Alexander England, assistant chief engineer of the **Westinghouse Air Brake Company,** Wilmerding, Pa., has been appointed chief engineer, to succeed S. W. **Dudley,** whose retirement on February 1 was noted in the *Railway Age* of

February 4. **R. E. Miller,** engineer of tests and inspection, has been promoted to superintendent of tests and inspection; **W. E. Dean,** assistant engineer of tests, has been promoted to engineer of tests, and **A. A. Mackert,** chief inspector, has been promoted to engineer of inspection.

Alba B. Johnson, formerly president of the Baldwin Locomotive Works, has resigned from the board of that company and also as a director of the Standard Steel Works, Philadelphia, Pa. **John M. Hansen,** president of the Standard Steel Car Company, Pittsburgh, has been elected a director and member of the executive committee of the Baldwin Locomotive Works and **W. L. Austin,** vice-chairman of the board of directors of the Baldwin Locomotive Works, has been elected a director of the Standard Steel Works, Philadelphia, to succeed Mr. Johnson.

E. Emery, formerly manager of the R. H. Blackall Company, Pittsburgh, Pa., has opened offices in the Oliver building, Pittsburgh, under the firm name of the **Emery Sales Company,** handling railway supplies. Mr. Emery will serve as special representative, reporting to the Pittsburgh office of the Schaefer Equipment Company, handling its full line of foundation brake details in a defined territory. He will also have charge of sales in the Pittsburgh district of the Mason Packing Company, Pittsburgh, which manufactures the Mason semi-metallic packing for locomotive air pumps, and will represent the Standard Horsenail Company, New Brighton, Pa., handling its line of taper pins, shaft keys and channel pins. Mr. Emery was graduated from the Chicago Manual Training School in 1899, after which he was connected for two years with the F. B. Reddington Company, Chicago, in an engineering capacity. He was for eight years with A. Sorge, Jr., & Company, Chicago, handling a steam specialty line. He was engaged in sales and engineering work for a time and later was with the Parker Boiler Company, Philadelphia, Pa., for one year as general sales manager. Mr. Emery was then assistant sales manager of the Rust Boiler Company, Pittsburgh, and when that business was sold to other interests he joined the R. H. Blackall Company.

E. Emery

E. D. Kellogg has been appointed New Jersey representative for the Conveyors Corporation of America, Chicago, manufacturers of machinery for handling coal, sand, gravel, ashes and other loose bulky materials. Mr. Kellogg will handle the American trolley carrier and the American steam jet conveyor in the northern half of New Jersey, with his headquarters at the eastern office of the company, 110 West Fortieth street, New York. Mr. Kellogg graduated from Stephens Institute of Technology in 1898, and specialized in the design and construction of steel structures in this country and Canada until 1916, when he entered the material handling field with the Terry Manufacturing Company, New York, manufacturers and builders of heavy derricks and traveling cranes.

The Toledo Crane Company, Bucyrus, Ohio, successors to The Toledo Bridge & Crane Company, Toledo, builders of Toledo cranes, has been chartered under the laws of Ohio, with the following officers: **C. F. Michael,** president; **W. F. Billingsley,** vice-president and general manager; **A. G. Stoltz,** treasurer, and **C. Gallinger,** secretary. The officers with **C. H. Dexheimer** are the stockholders and directors. All stock has been subscribed and paid in and none will be offered for public subscription. The main office is at Bucyrus, with sales offices in New York City, Boston, Philadelphia, Pittsburgh, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Kansas City, Seattle, Salt Lake City, San Francisco, Birmingham and Minneapolis. The company will have completed by March 15 a building 120 ft. by 320 ft., to be used for erecting and assembly, with a machine shop 60 ft. by 300 ft., a structural shop 90 ft. by 300 ft., a pattern shop 60 ft. by 140 ft., and a forge shop 40 ft. by 100 ft., all to be equipped with modern tools.

J. Allan Smith has resigned as president of the U. S. Light & Heat Corporation, Niagara Falls, N. Y. Mr. Smith is leaving to engage in business for himself, a step which he has long been contemplating. He has been identified with the affairs of the U. S. Light & Heat Corporation for a number of years, managing its business during the most precarious times of its existence. In the early days the business of this company largely consisted of the manufacture and sale of train lighting devices, and under the management of Mr. Smith, the storage battery manufacturing business has grown until now it is one of the largest battery producers of this country. Mr. Smith has been succeeded by **C. O. Miniger,** of Toledo, Ohio, who is vice-president of the Willys Corporation and general manager of the Auto-Lite division of that corporation at Toledo. Mr. Miniger is well known to the automobile industry; he has been closely identified since the early days of the automobile with the manufacture and sale of electric lighting and starting devices for motor cars. He was one of the original incorporators and organizers of the old Electric Auto-Lite Company which began in a very limited way manufacturing electric starting devices. When John N. Willys acquired control of that company, Mr. Miniger was placed in charge of its affairs and through his efforts its business has been built up to one of the largest producers of electric starting and lighting devices for motor cars. It has also become a large producer of farm lighting outfits. Mr. Miniger will give all of the attention which may be necessary to his new duties but will still continue to be in charge of the Electric Auto-Lite division of the Willys Corporation at Toledo. His title in the U. S. Light & Heat Corporation will be president and general manager. **C. L. Lane** has resigned as vice-president and general manager of the U. S. Light & Heat Corporation and **D. H. Kelly** has been elected to serve as vice-president and assistant general manager. Mr. Kelly was for eight years secretary of the Toledo Scale Company, Toledo, and for the past two years has been assistant sales manager of the Willys Light division of the Electric Auto-Lite Corporation. He has had 10 years' experience in the railroad field.

Obituary

Clifford J. Ellis, district manager of sales for the **Midvale Steel & Ordnance Company** and the **Cambria Steel Company,** with headquarters at Chicago, Ill., died at his home in Evanston, Ill., on January 31. Mr. Ellis had been district manager of sales for more than 30 years and for 37 years had been in the service of the Cambria Steel Company at Chicago. He was born on November 25, 1860, and when 19 years of age entered the employ of Wood Morrell & Co., Johnstown, Pa., who controlled the Cambria Iron Company. Not long thereafter he became assistant to the treasurer and in 1883 he was transferred to Chicago, entering the sales department of the company, where he had served up to the time of his death.

C. J. Ellis

Railway Construction

ATCHISON, TOPEKA & SANTA FE.—This company, which was noted in the *Railway Age* of February 4 (page 349), as intending to build a complete ice plant at Hobart Station, Cal., at a cost of approximately $500,000, has awarded the contract for this work to C. A. Fellows, Los Angeles, Cal. This company has awarded the contract for the construction of the frame blacksmith shop at Newton, Kan., which was noted in the *Railway Age* of January 28 (page 308), to Jerome Moss, Chicago. The Santa Fe will build new icing facilities at Clovis, N. M., including platforms at a cost of $21,660. The company's icing facilities at Waynoka, Okla., will be also increased by the construction of additional platforms and ice chutes so as to permit the handling of 44 cars instead of 17, as at present. The work at Waynoka will cost about $30,000.

CHICAGO UNION STATION.—This company, which was noted in the *Railway Age* of January 28 (page 308) as accepting bids for the wrecking of the old Chicago & Alton freight house at Harrison street and the Chicago river, has awarded the contract for this work to the W. J. Newman Wrecking Company, Chicago.

ILLINOIS CENTRAL.—The Groom Coal Company will build a frame coaling station at Belleville, Ill., on the line of this company.

NORTHWESTERN PACIFIC.—This company is preparing plans for improvements contemplated on its terminal at Sausalito, Cal.

PATTERSON & WESTERN.—This company has applied to the Interstate Commerce Commission for a certificate authorizing the abandonment of its line between Patterson and Jones Station, Calif., a distance of 23.6 miles.

RED RIVER VALLEY.—This company has completed surveys for a line from Fargo, N. D., north to Alvarado, Minn., a distance of approximately 100 miles. The project was abandoned temporarily during the war, but has been revived and the company plans to begin construction of this line during 1921.

SOUTHERN PACIFIC.—The Railroad Commission of California has ordered this company to improve its depot facilities at Oakland, Cal., at a cost of not less than $50,000, declaring that the existing facilities are unsatisfactory.

THE ATCHISON, TOPEKA & SANTA FE, in ten months of 1920, paid 259 bills for loss or damage on trunks, suitcases and traveling bags, a total expenditure of $5,449, or an average of $21 per shipment; and J. R. Hitchcock, assistant general manager of the company's Coast Lines, has sent to station agents a six-page table showing for each of these damaged shipments the date, the starting point, the destination, the amount of the bill and a brief description of the nature of the damage.

Two hundred and fifty-nine items of this kind make an impressive exhibit. One wonders what would be the average loss per shipment, if all shipments, including those not damaged, had been included.

Some of the losses were, no doubt, simple thefts, but the statement says that losses are in the minority; the majority is made up of damage items. A great many entries read "chafed" or "scratched," and the salient feature of the comments printed in the circular is a call to enforce more strictly the rule requiring such goods to be adequately packed and protected. But it appears that about 80 per cent of the shipments originated east of the Santa Fe's eastern terminus, many of them in New York and New England, so the question of getting this economy-lecture into the right hands is not an easy one.

The same pamphlet contains a similar table of losses on drugs and druggists' sundries which totals 707 claims, amounting to $7,824; an average per shipment of about eleven dollars.

Railway Financial News

BALTIMORE & OHIO.—*Authority to offer bonds as security for notes.*—This company has been authorized by the Interstate Commerce Commission to pledge from time to time as security for short term notes $9,935,000 of various bonds which are nominally issued or authorized.

CHESAPEAKE & OHIO.—*Authorized to guarantee note.*—The Interstate Commerce Commission has authorized this company to guarantee a promissory note of the Louisville & Jeffersonville Bridge for $54,000, payable to the United States.

CHICAGO, BURLINGTON & QUINCY.—*Oral argument on capitalizing surplus.*—The Interstate Commerce Commission has announced an oral argument on February 14 on the application of this company to capitalize its surplus.

CHICAGO, MILWAUKEE & ST. PAUL.—*Authorized to guarantee note.*—The Interstate Commerce Commission has authorized this company to guarantee a 10-year 6 per cent promissory note of the Indiana Harbor Belt for $116,000 as part security for a loan from the United States.

CHICAGO, ROCK ISLAND & PACIFIC.—*Application to issue bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue $1,000,000 general mortgage 4 per cent gold bonds, dated January 1, 1898, and maturing January 1, 1988, to be deposited with the Central Union Trust Company of New York as a basis for an issue of $1,000,000 first and refunding mortgage 4 per cent gold bonds, dated April 1, 1904, and maturing in 1934, which are to be held for use from time to time as collateral for short term loans.

CHICAGO, TERRE HAUTE & SOUTHEASTERN.—*Stockholders approve lease to C., M. & St. P.*—The lease of this property to the Chicago, Milwaukee & St. Paul for 999 years has been approved by 68 per cent of the stock and 79 per cent of the income bondholders.

CHICAGO & EASTERN ILLINOIS.—*Authorized to issue stock and bonds for reorganization.*—The Interstate Commerce Commission has authorized this company to issue $4,285,000 of prior lien or first mortgage bonds, $32,156,000 of general or second mortgage bonds, $24,030,150 of preferred stock, and $25,500,000 of common stock, in accordance with its recent application for the purpose of reorganizing the Chicago & Eastern Illinois. The company is also authorized to assume liability for the payment of various outstanding bond issues which are not to be disturbed in the reorganization, together with equipment obligations, and in the event that a loan of $785,000 be made to the company from the revolving fund, and that the director general of railroads shall lend $3,500,000 to the receiver, the company is authorized to issue and pledge as security for such loans additional prior lien or first mortgage bonds not exceeding $1,071,000.

CHICAGO & NORTH WESTERN.—*Bond issue.*—Kuhn, Loeb & Co. announce the purchase of $15,000,000 15-year 6½ per cent gold bonds, which are offered to the public by them and the National City Company for subscription at 99¼ per cent and accrued interest, to yield about 6.58 per cent. The purpose of the issue is to provide funds to pay off $10,000,000 Chicago & North Western debenture 5 per cent bonds, maturing April 15, 1921, and $5,000,000 Milwaukee, Lake Shore & Western consolidated mortgage 6 per cent bonds, maturing May 1, 1921. The new issue will be secured by the pledge of $18,000,000 face value Chicago & North Western 5 per cent general mortgage bonds. The issuance of these bonds is subject to the approval of the Interstate Commerce Commission.

New director.—Marshal Field, 3rd, has been elected a director to succeed James A. Stillman, president of the National City Bank, resigned because of Section 10 of the Clayton Act.

CHICAGO & NORTH WESTERN.—*Authorized to guarantee note.*—The Interstate Commerce Commission has authorized this company to guarantee the 10-year 6 per cent promissory note of the Indiana Harbor Belt for $116,000 as part security for a loan from the United States.

DELAWARE, LACKAWANNA & WESTERN.—*Oral argument on capitalizing surplus.*—The Interstate Commerce Commission has announced an oral argument on February 14 on the application of this company to capitalize its surplus.

DENVER & RIO GRANDE.—*New stockholders' committee head.*—Benjamin B. Odell, president of the Aetna Explosives Company and former Governor of New York, and S. M. Schatzkin have become members of the stockholders' protective committee. Mr. Odell was elected chairman of the committee, following the resignation of the chairmanship by Jefferson M. Levy. The other members are George F. Secor, G. Tracy Rogers and John T. Steele.

ELECTRIC SHORT LINE.—*Application for bond issue.*—This company has applied to the Interstate Commerce Commission for authority to issue its 15-year gold bonds, at not less than 90, at the rate of $15,000 per mile, and its non-cumulative preferred stock, at not less than 90, at the rate of $10,000 a mile, to complete its line from Hutchinson to Clara City, Minn., 52 miles.

FORT SMITH & WESTERN.—*Sale ordered.*—Federal Judge F. A. Youmans has ordered the sale of this road to the highest bidder on March 31, at Fort Smith, Ark. The road has been in the hands of a receiver since October 9, 1915. A new company, the Fort Smith & Western Railway, was incorporated in Delaware, January 10, 1921, with an authorized capital of $7,000,000. The incorporators are Alton S. Dustin, Homer H. McKeehan, and W. E. Stewart, Cleveland. The Corporation Trust Company is the company's Delaware representative.

GEORGIA & FLORIDA.—*Application to issue certificates.*—This company has applied to the Interstate Commerce Commission for authority to issue $1,600,000 of certificates of indebtedness of 8 per cent for three years, half to be used as collateral for a loan from the United States and half for the improvement of its property and to retire existing indebtedness.

INDIANA HARBOR BELT.—*Application to issue bonds.*—The Interstate Commerce Commission has authorized this company to issue $579,000 of 5 per cent general mortgage gold bonds and to pledge them with the Secretary of the Treasury as security for a loan from the United States. As evidence of the loan the company will give its 10-year 6 per cent promissory notes secured by the pledge of the bonds and guaranteed as to payment of principal and interest by the New York Central, Michigan Central, Chicago, Milwaukee & St. Paul, and Chicago & North Western, which own the capital stock of the Indiana Harbor Belt, and the amounts to be guaranteed by each are substantially proportionate to their respective holdings.

Loan approved.—The commission has announced its approval of a loan of $579,000 to enable the company to provide itself with miscellaneous equipment and other additions and betterments.

LONG ISLAND.—*Equipment trusts sold.*—Plympton, Gardiner & Co., Cassatt & Co., Paine, Webber & Co., of New York, and Strother, Brogden & Co., of Baltimore, Md., announce the sale of $1,656,000 6 per cent equipment trust certificates, series "C," at prices ranging from 99.51 to 92.18, to yield 6¾ per cent.

LOUISVILLE & JEFFERSONVILLE BRIDGE.—*Authorized to issue bonds.*—This company has been authorized by the Interstate Commerce Commission to issue $162,000 of 4 per cent first mortgage gold bonds and to pledge them with the Secretary of the Treasury as security for a loan.

LOUISVILLE & NASHVILLE.—*Authorizations asked.*—Application has been made to the Interstate Commerce Commission for authority to assume obligations imposed by a trust agreement and a lease of equipment, by which it agrees to pay to the United States Trust Company of New York, as rental and on account of the purchase price of equipment, $14,933,379.22, of which approximately $3,908,379 is payable in cash and $11,025,000 in 15 annual instalments of $735,000 each, from 1922 to 1936, with interest at 6½ per cent. It is proposed to sell the equipment trust certificates to J. P. Morgan & Co. at $95.70. The equipment proposed to be purchased consists of 12 Pacific, 16 Mikado and 6 switching locomotives, 2,000 steel underframe box cars, 100 stock cars, 300 coke cars, 300 low-side gondola cars, 10 cabooses, 2,000 all-steel hopper cars, 3 postal cars, 8 baggage cars, 25 coaches and 7 dining cars.

This company has applied also for authority to issue $3,500,000 of first mortgage 6 per cent bonds, dated March 1, 1921, and maturing March 1, 1971, secured by a mortgage on the Southeast & St. Louis Railway, to retire a similar amount of bonds issued by that company under its mortgage of 1881. It is proposed to exchange as many of the new bonds as possible for the old bonds and to sell the balance to J. P. Morgan & Co.

LOUISVILLE & NASHVILLE.—*Equipment trusts sold.*—An issue of $11,025,000 6½ per cent equipment trust certificates. Series D, has been sold to J. P. Morgan & Co.

MAINE CENTRAL.—*Dividend passed.*—The directors have passed the quarterly dividend on the preferred stock, payable March 1. Similar action was taken in the previous quarter.

MICHIGAN CENTRAL.—*Authorized to guarantee note.*—This company has been authorized by the Interstate Commerce Commission to guarantee the 10-year 6 per cent promissory note of the Indiana Harbor Belt for $173,000 as part security for a loan from the United States.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—*Equipment notes sold.*—Dillon, Read & Co. have sold $2,500,000 6½ per cent equipment trust gold notes, Series "J," at par and interest, for 1926 to 1931 maturities, and increasing ¼ per cent for each maturity thereafter to 101, for 1935 maturity.

NEW ORLEANS, TEXAS & MEXICO.—*Loan approved.*—The Interstate Commerce Commission has approved a loan of $234,000 to aid this company in providing itself with additions and betterments. The applicant itself is required to finance $234,246 to meet the loan of the government.

Authorized to issue bonds and notes.—The Interstate Commerce Commission has authorized this company to issue eight promissory notes to the amount of $25,000 each, payable to the order of the American Car & Foundry Company at 7 per cent, to execute an agreement for the purchase of five Russian locomotives from the War Department; to issue $800,000 of first mortgage 6 per cent gold bonds, and $530,000, or such amount as may be required, of 5 per cent non-cumulative income bonds, and to pledge them with the Secretary of the Treasury as security for a loan. The company is also authorized to issue $280,000 of 5 per cent non-cumulative income bonds, and approval is given for the delivery of $175,000 of voting trust certificates, representing an equal amount of capital stock to comply with the plan of reorganization, dated August 25, 1915, under which the company was organized.

NEW YORK CENTRAL.—*Authorized to issue bonds.*—The Interstate Commerce Commission has authorized this company to issue $7,000,000 of 6 per cent refunding and improvement mortgage bonds and to pledge them with the director general of railroads as security for a demand note.

NEW YORK CENTRAL.—*Authorized to guarantee note.*—The Interstate Commerce Commission has authorized this company to guarantee a 10-year 6 per cent promissory note of the Indiana Harbor Belt for $174,000 as part security for a loan of $579,000.

PARIS-ORLEANS RAILROAD, FRANCE.—*Bond issue.* A. Iselin & Co., Hemphill, Noyes & Co., and Halsey Stuart & Co., are offering 5,000,000 francs, 6 per cent bonds, foreign series, of the Paris-Orleans Railroad (Compagnie du Chemin de Fer de Paris à Orleans). The bonds are offered at 92, which at the present rate of exchange is equivalent to $65.50 per 1,000 franc bond. They are redeemable at par, by drawings, not later than 1956.

PENNSYLVANIA.—*Application for bond issue.*—This company has applied to the Interstate Commerce Commission for authority to issue the $60,000,000 of 15-year 6½ per cent secured gold bonds, which were recently sold to Kuhn, Loeb & Co., subject to the commission's approval at 95.40, and also $60,000,000 of 6 per cent gold bonds, series "C," secured by its mortgage, dated June 1, 1915, to be used as security for the 6½ per cent issue.

PICKENS RAILROAD.—*Application for loan.*—This company has applied to the Interstate Commerce Commission for a loan of $10,000 to enable it to take up a note and pay an overdraft at a bank, and also to pay its employees back wages.

PITTSBURGH & LAKE ERIE.—*New director.*—James B. Yohe has been elected a director, succeeding R. B. Mellon.

RARITAN RIVER.—*Authorized to issue stock.*—This company has been authorized by the Interstate Commerce Commission to issue and sell at par 1,600 shares of common stock of the face amount of $100 a share to reimburse its treasury for expenditures from income.

ROCK ISLAND SOUTHERN.—*Application for loan.*—The receiver has applied to the Interstate Commerce Commission for a loan of $150,000 for two years for the purchase of one locomotive and improvements to roadway and equipment.

SEABOARD AIR LINE.—*Authority asked for bond issue.*—Application has been made to the Interstate Commerce Commission for authority to nominally issue $713,000 of its first and consolidated mortgage bonds to be used, together with $1,077,000 of the bonds already held in the company's treasury, as collateral security for loans from the United States.

UNION PACIFIC.—*May purchase Kansas City Northwestern.*—Unconfirmed reports are to the effect that this company is planning to buy in the Kansas City Northwestern for the purpose of acquiring terminal facilities at Kansas City. The Kansas City Northwestern ceased operating November 1, 1919. J. M. Lee is receiver.

VIRGINIA SOUTHERN.—*Authorized to issue notes and bonds.*—The Interstate Commerce Commission has authorized this company to issue 6 months' promissory notes to the amount of $37,000 at 6 per cent, payable to the First National Bank of Richmond, Va., and also $150,000 of its first mortgage 6 per cent gold bonds, of which $76,000 is to be pledged as security for a loan from the United States and $74,000 as security for a note to the bank.

WHEELING & LAKE ERIE.—*Authority asked for bond issue.*—This company has applied to the Interstate Commerce Commission for authority to issue $884,000 of its 6 per cent mortgage bonds to reimburse the treasury for expenditures and to be used as collateral for a loan from the United States.

NAVAL NEWS.—It is stated that there are many skilled engineers and crews of railroad tugs and lighters in New York harbor now out of work who are more than eager for a return to the old ten-hour-a-day basis.—*Journal of Commerce.*

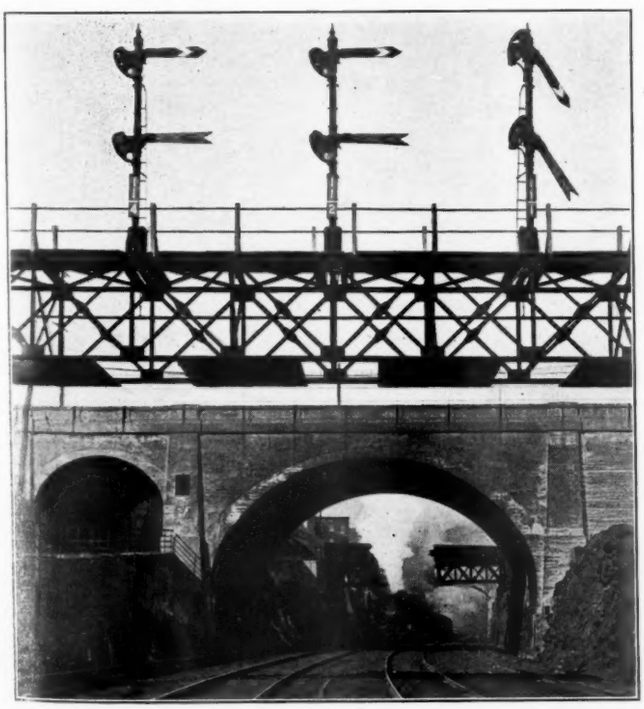


Photo by Ewing Galloway

Entrance to the Bergen Archways on the Erie at Jersey City

Railway Officers

Executive

J. P. Cowley has been appointed assistant to the vice-president of the Gulf, Colorado & Santa Fe with headquarters at Galveston, Tex., effective February 1, succeeding V. C. James, resigned.

Financial, Legal and Accounting

C. H. Bender has been appointed paymaster and assistant treasurer on the Minneapolis, St. Paul & Sault Ste. Marie, with headquarters at Minneapolis, Minn., effective January 1.

A. Hermany, auditor of disbursements of the Chicago, Rock Island & Pacific, with headquarters at Chicago, has been promoted to assistant general auditor with the same headquarters. **R. H. Carleton,** assistant auditor of disbursements, has succeeded Mr. Hermany as auditor of disbursements. **A. A. Middleton** has succeeded Mr. Carleton. These changes were effective February 1.

E. E. Lloyd, auditor of disbursements of the Canadian Pacific, has been appointed assistant comptroller with headquarters at Montreal, succeeding W. J. Moule, deceased. **H. J. Dalton,** assistant auditor of agencies, has succeeded Mr. Lloyd as auditor of disbursements. **R. W. Urwin** has been appointed assistant auditor of agencies to succeed Mr. Dalton. **B. Arnum** has been appointed assistant auditor of agencies, succeeding **W. H. Blackaller,** retired.

Operating

A. S. McNeese has been appointed assistant trainmaster on the Southern Pacific, with headquarters at Yuma, Ariz., and jurisdiction over the Yuma terminal, succeeding B. I. McNeil, who has been assigned to other duties.

Traffic

J. S. Rampacher has been appointed district freight agent of the Southern, with headquarters at Philadelphia.

J. G. Kitchell has been appointed commercial agent of the Southern with headquarters at Shreveport, La., effective February 1.

H. V. Wilmot has been appointed district passenger agent on the Northern Pacific, with headquarters at Chicago, effective February 1.

J. H. Fox has been appointed district freight agent on the Canadian Pacific, with headquarters at Edmonton, Alta., succeeding F. W. Sterling, who has resigned, effective February 7.

A. Johnson, chief of the tariff bureau of the Michigan Central, has been appointed assistant general freight agent with headquarters at Detroit, Mich. **C. A. Hunt** succeeds Mr. Johnson as chief of the tariff bureau.

W. C. Connor, Jr., general agent on the Denver & Rio Grand and Western Pacific, with headquarters at New York, has been appointed general eastern agent of the Chicago & Eastern Illinois with the same headquarters, effective February 14.

E. R. Oliver, whose appointment as freight traffic manager of the Southern, Lines West, with headquarters at Cincinnati, Ohio, was announced in the *Railway Age* of November 12, 1920 (page 863), was born in La Fayette County, Miss., February 25, 1883. He was educated in the public schools and was graduated from the Jefferson Law School, Louisville, Ky., with the degree of LL. B. in 1910. Mr. Oliver began his railroad career in 1898 as a clerk in the traffic department.

He held various positions in that department until January, 1906, when he was appointed traveling freight agent at Chicago. The following year he was promoted to soliciting freight agent at Louisville, Ky. In 1910 Mr. Oliver was appointed chief clerk to the assistant freight traffic manager and, in 1912, to assistant general freight agent at Louisville, Ky. On January 1, 1916, he was transferred to Washington, D. C., and on October 1 of the same year to Atlanta, Ga. He was promoted to general freight agent with headquarters at Cincinnati, Ohio, in March, 1920, and was occupying that position at the time of his recent promotion.

A. M. Farrell, whose promotion to general freight and passenger agent of the Chicago, Ottawa & Peoria, with headquarters at Joliet, Ill., was announced in the *Railway Age* of January 28 (page 310), was born on January 2, 1884, at Charlestown, W. Va. He entered railway service in 1900 as a clerk in the office of the general superintendent of the Ohio River Railroad, at Parkersburg, W. Va., where he served until 1903, when he was employed by the Western Terminal Trunk Line Association as an inspector. After three years of service in this capacity, Mr. Farrell was appointed chief clerk in the freight office of the Baltimore & Ohio at Huntington, W. Va. In 1908, he was made rate clerk in the division freight office at Parkersburg, where he remained until 1910, when he was appointed traveling freight agent, with headquarters at Elkins, W. Va. Mr. Farrell entered the service of the Chicago, Ottawa & Peoria in 1913. At the time of his recent promotion he was serving as chief clerk in the traffic department.

A. M. Farrell

Mechanical

C. J. Sevier has been appointed assistant to the superintendent maintenance of equipment of the Western Maryland, with headquarters at Hagerstown, Md.

H. W. Salmon, Jr., has been appointed acting fuel agent on the Missouri Pacific, with headquarters at St. Louis, Mo., effective February 1, succeeding **W. P. Hawkins,** who has resigned.

O. J. Greenwell has been appointed master car repairer on the Tucson division of the Southern Pacific, with headquarters at Tucson, Ariz., succeeding A. G. Saunders, who has resigned.

H. M. Allen, locomotive foreman on the Canadian Pacific, with headquarters at Alyth, Alta., has been promoted to master mechanic, on the Kenora Division, with headquarters at Kenora, Ont.

G. S. Goodwin, corporation mechanical engineer of the Chicago, Rock Island & Pacific, has been appointed mechanical engineer of the Rock Island System, with headquarters at Chicago, effective February 1.

A. J. Krueger, shop inspector of the New York, Chicago & St. Louis, with headquarters at Cleveland, Ohio, has been promoted to master car builder with the same headquarters, succeeding R. W. Miller, deceased, effective February 4.

H. A. Amy, locomotive foreman on the Canadian Pacific, with headquarters at North Bay, Ont., has been promoted to division master mechanic, with headquarters at Ottawa, Ont. **E. G. Freeman,** locomotive foreman, with headquarters at Cartier, Ont., has been transferred, succeeding Mr. Amy.

J. Gibson, locomotive foreman on the Canadian Pacific, with headquarters at Sutherland, Sask., has been promoted to master mechanic with headquarters at Moose Jaw, Sask., succeeding **A. Peers,** whose appointment as master mechanic was announced in the *Railway Age* of January 7 (page 174).

Engineering, Maintenance of Way and Signaling

C. C. Cunningham has been appointed division engineer of the Kansas division of the Chicago, Rock Island & Pacific, with headquarters at Herington, Kan., succeeding F. Nugent, who has been transferred, effective January 31.

G. W. Boschke, whose appointment as assistant chief engineer of the Southern Pacific, lines west of Ogden, El Paso and Portland, with headquarters at San Francisco, was announced in the *Railway Age* of January 7 (page 174), was born on October 10, 1864, at Boston, Mass., and was educated at Wilson College. He entered railway service in 1886 in the engineering department of the Southern Pacific, being engaged in construction work on the Portland route of the Coast division, and the Southern Pacific terminals at Galveston, Tex. During his service at Galveston, Mr. Boschke was employed by the city of Galveston to supervise the construction of the Galveston sea wall. In April, 1905, he was appointed chief engineer of the Oregon-Washington Railroad & Navigation Company, and in addition to his other duties he was appointed engineer maintenance of way on the lines of the Southern Pacific in Oregon. When the Union Pacific and the Southern Pacific were placed under independent operation, Mr. Boschke left railroad service to enter private practice as a consulting engineer. He was engaged in this work and as a contractor at the time of his recent appointment.

Purchasing and Stores

H. W. Salmon, Jr., has been appointed acting fuel agent of the Missouri Pacific, succeeding W. P. Hawkins, resigned, effective February 1.

Obituary

Lucius E. Johnson, until recently chairman of the board of the Norfolk & Western, died February 9, at Deland, Fla. Mr. Johnson retired as chairman of the board on January 1, under the pension rules of the company, as was announced in the *Railway Age* of January 21 (page 262).

Henry Hiden, general agent on the Chicago, Indianapolis & Louisville, with headquarters at Birmingham, Ala., died of pneumonia on the evening of February 1. Mr. Hiden had been general agent at Birmingham for the past 12 years, with the exception of a part of the period of federal control, when his headquarters were at Lafayette, Ind.

Photo by Underwood & Underwood.

Hungry Chinamen Leaving the Famine Stricken Areas for Regions Where Food Is to Be Had